AMERICAN GAS ASSOCIATION MONTHLY

Vol. II No. 9

September, 1920

"It is a cheap and easy thing, and sometimes results in temporary glory, for Commissioners to denounce public utilities; but it is a very costly thing; it is a very costly thing for the companies and for the commissioners, because, finally, a denunciation may go to the point of wreck, and regulation and Commissioners go down with the wreck."—Edwin O. Edgerton, *President Railroad Commission of the State of California.*

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FOR STATEMENTS AND OPINIONS CONTAINED IN PAPERS AND DISCUSSIONS APPEARING HEREIN, THE ASSOCIATION DOES NOT HOLD ITSELF RESPONSIBLE

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AMERICAN GAS ASSOCIATION

MONTHLY

ADDRESS ALL COMMUNICATIONS TO THE AMERICAN GAS ASSOCIATION, Inc.
130 E. 15th St., NEW YORK, N. Y.

Vol. II SEPTEMBER, 1920 No. 9

A Better Understanding

The Publicity Program submitted at the Emergency Meeting of Executives of the gas industry on May 26, was adopted with a full realization of the necessity for securing the support of the press if the story of the gas industry's critical condition and need of relief was to be fairly and impartially put before the public.

The growing conviction in the minds of the editors of newspapers generally throughout the country, that the gas industry is entitled to the same fair treatment as is accorded to all other industries, and that the public is also a responsible party to seeing that this essential industry is fully protected and allowed to operate under conditions which will enable it to pay a fair return on the investment, attract the capital necessary to meet all the demands on the service, and enable it to pay the largely increased costs of essential materials and equipment, is very evident if we are to take the tone of the editorials recently appearing in the press as any criterion of a changed condition for the better.

The press as a medium for moulding favorable sentiment towards the gas companies, is the most powerful and wide-reaching of any available to us and when we see such unsolicited editorial comments as the following appearing almost daily in all parts of the country we cannot but feel that the seed of our efforts has been cast upon fertile soil.

The *Morning New Bernian*, New Bern, N. C., says:

"It is hardly possible to-day to read a newspaper of large circulation, without finding in it an article dealing with the troubles of gas, electric light, street railway and water companies. We confess we know nothing of the details required to operate Public Utilities, but we know that if they are the victims of high prices for the raw materials required to carry on their work, in the same proportions that newspapers have had to suffer, they must be in pretty bad shape. They must be given a return which will enable them to secure financial aid in making extensions and improvements and we do know they cannot live on the same returns they were receiving two, yes even one year ago. We happen to know the officials of the local company have spent thousands of dollars in making their property one of the best in the state and from our own experience we know that New Bern has never enjoyed better service or more courteous treatment."

From the *Press* of Middletown, Conn., comes the following:

"There is no denying that the problem confronting gas companies is a most difficult one. They have been hard hit in the way of advancing costs for almost everything that goes into gas making and many of them delayed a long time before announcing advanced rates of any kind. One thing is certain, the country cannot eat the cake of high wages and expect to have the dough of low prices in any direction. Everything has gone up. Gas must go as well."

In the Millville (N. J.) *Daily Republican* there recently appeared the statement:

"The present country-wide fights against increased trolley fares, gas, electric and water rates, will result in serious punishment to the people as a whole if it continues. If people could be made to take this view of the situation of public utility companies of all kinds, a large share of their troubles would be ended, but in their blind folly they prefer to listen to the crude, half-baked, hair-brained arguments of a lot of demagogues who are always against the corporations. What has happened to the railroads will happen to trolley, gas and electric companies unless they are granted relief, and when they are out of business or so badly crippled that they only render partial service, the people will discover their blind blundering as they have already discovered it in the case of the railroads, and the ultimate bill will come to them for payment."

The *Press* of Portland, Me., on August 9 in an editorial on Judge Hand's decision in the Consolidated Gas case, said *in part:*

"New York gas companies, like similar companies everywhere, are finding difficulty in making gas, with the present price of coal so that it can be sold profitably at figures which prevailed a few years ago. There is no reason why a gas company should be compelled to do business at a loss, any more than there is why a merchant should sell goods below their cost to him. The difference is that the merchant is permitted to charge what to him seems reasonable, while many gas companies, where they are restricted by law, as they have been in New York, are compelled to manufacture gas and dispose of it for less than it costs to produce. This is the condition the New York courts are endeavoring to change."

AMERICAN GAS ASSOCIATION MONTHLY

Vol. II SEPTEMBER, 1920 No 9

Be Your Own Publicity Agent

THIRTY miles from Pittsburgh, Pa., there is an electric railway company that has been able to increase its fares four times in three years without serious objection from the public. In view of the opposition encountered by other companies in attempting to get a single increase, this sounds more like fiction than fact, but such is the unique record of the Beaver Valley Traction Company.

Publicity of the right kind did the trick for this company and the man responsible for planning, writing and placing it is William H. Boyce, superintendent, who did it without any aid from a publicity expert and who was himself inexperienced in the subject when he first approached it. It was through no choice of his own, however, that he took his pen in hand and proceeded to the task. His company could not afford the expense of a trained publicity man, yet he realized that a campaign had to be started at once to retain the good will of the public. He was forced, therefore, to be his own publicity agent.

How Mr. Boyce went about his task and what he learned in doing it, will profit many a man in the gas business to-day who is eager to utilize the power of publicity in telling his story to the public, but who can not afford to hire a publicity man and who believes that he is utterly unfitted to undertake such work himself. One lesson to be learned from Mr. Boyce's experience, as set forth in the official publication of the American Electric Railway Association is that a man with an ordinary knowledge of the English language plus cold, hard business facts and a little enthusiasm can do publicity work and do it well.

Without attempting to minimize the work that is being done by regular publicity men, Mr. Boyce goes on record as saying:

"We do not agree with those who contend that publicity work can only be handled by a specialist in that line. Real publicity is what you do, not what you say. Real publicity must have a firm foundation of fair dealing and frankness. Real publicity is service first of all.

"Of what profit would it be to a company to employ a publicity agent to maintain one attitude toward the public while

operating officials maintained another?"

Because Mr. Boyce believes that real publicity is service first of all, he centered his attention on the employees of his company before he did anything else. One of his early acts was to prepare an Employee's Service Code in which is explained just what the company means when it declares there shall be good service. One extract from the booklet is of more than usual interest. It reads:

"Let me tell you that the passengers are more valuable to us than you are. We cannot get along without passengers. So, put in the background any idea you may have that you are the king-pin. You are not. Neither am I. The passenger is the important party. Don't forget it."

Speaking to his employees on the question of company ownership, he says:

"You have friends who believe the facts that you give them about the financial condition of your company. Suppose you could rate every person in your community as your friend? Impossible, of course, but wouldn't things be easy for you? Many valuable acquaintanceships may be formed through affiliation with commercial and social organizations. These, if properly fostered, will resolve into friendships that will prove of inestimable value in times of trouble."

Every opportunity of proving that the company is a vital factor in the life of the community is eagerly seized by the management. Full advantage is taken at the annual county fair to impress visually upon the public the company's problems and what it is trying to do. Novel exhibits designed to make the people think are shown. In addition to mechanical apparatus displayed in the company's booth, there are posters which present facts about the financial condition of the company, operating difficulties and accident prevention.

There are seven newspapers published in the territory served by the Beaver Valley Traction Company. In the light of his experience Mr. Boyce has this to say about dealing with the press:

"Never lose sight of the fact that public opinion can make or break any company, particularly if that company is in need of a fare increase, franchise extension or relief from any of the numerous burdens that a public could or would put upon it.

"As a rule you will find newspaper men just as fair, if not fairer, than railway men, but it is necessary to be extremely careful in the manner in which you attempt to 'stand in' with the newspapers. Editors guard their so-called rights with extreme jealousy, but they will not trouble you a great deal if the public is not against you.

"Furnish service to newspapers as well as passengers. Have some one designated from whom newspapermen can secure information. The reporter, cub or veteran, can do more for or against you than any other individual in the community. No matter how much you may dislike his personality or his method of handling news items concerning your system, you will do well to cultivate him.

"Newspapermen here all understand that at any time they 'phone this office they can get full and correct information about any accident that has happened on our lines, or any contemplated improvements. If we are not ready to have this information made public, we give them an adequate explanation, and we have yet to experience the disappointment of having our confidence violated by any newspaperman in this community."

Very decided views on the value of newspaper advertising as a regular program for a traction company are held by Mr. Boyce.

"The old press agent methods have been outlawed," he declares. "When you have anything to tell your public in the newspapers, put it into a paid advertisement. If you have a bad operating condition that for some reason you cannot correct, do not wait for the newspapers to make a story of it. Put the whole truth and your explanation in a paid advertisement. However, do not make the mistake of supposing an occasional newspaper advertisement when a company is in trouble or wants something will perform a miracle. When a utility first begins to advertise, or advertises but intermittently, the public by instinct is suspicious that 'some job is about to be pulled.' Therefore, the continued use of small advertising space at all times, and a larger amount as warranted, is advisable.

"One of your tasks is to remove the impression, if it prevails, that you and the public are working for opposite results. You make a sad mistake if you try to prove to your public that it is wrong. Acquaint it with enough of your difficulties so that it will find out for itself that it is wrong. Forget not that the public is to be the judge of your service."

What Mr. Boyce has accomplished by mere force of initiative can be repeated by a great many gas men for their respective companies if they will disregard the many superstitions regarding writing and the ability to write which seem to hold most of us in mortal fear of trying to say something on paper.

The time has passed when writers can fool the public into believing that they have to sit in cloister before their great minds will function. With a working knowledge of the English language and plenty of facts as ammunition, any gas man can keep step with Mr. Boyce and carry his story to his employees and to his public with equal success. Furthermore, the gas man has the advantage over Mr. Boyce, in that the Emergency Committee and the Publicity and Advertising Committee of the A. G. A. are working with him from start to finish.

"The treatment to which public utility companies have been subjected in many localities in the United States must be condemned by every fairminded citizen.

"The spectacle of great enterprises tottering toward bankruptcy merely because they are not permitted to make a living charge for the services they render, may well cause widespread apprehension.

"It is a symptom of perverse-mindedness and a menace to prosperity."—*Leslie's Weekly.*

The Voice of the Gas Man

IF these are portentous days for humanity in general they are also history-making days for the gas industry. One does not need to be close to the pulse of things to appreciate this fact. It is audibly present on the lips of millions of people and it is visibly present in the pages of thousands of newspapers. The word "gas" is getting to be a by-word. The voice of the gas man is being heard.

When, in the life of an industry over a hundred years old, have there been so many rate increases granted companies over a similar period as in the thirty days previous to August 10th? When have the newspapers of the United States and Canada commented so voluminously and so fairly on the various phases of the gas situation as they have during this same period? And who can recall the day when the entire industry was so well knit together as it is at the present time, or when the gas man was on more intimate terms with regulatory officials and with the gas-consuming public?

If the trend of public opinion is a true barometer of the immediate future, it looks as if the pendulum is beginning to swing toward the side of better business for the industry. Aside from a few isolated instances, the public, by and large, is in sympathy with the plight of the public utilities. Editorial utterance proves it. As *The Sun* and *New York Herald* says:

"Government control of public utilities has been sampled generously by the United States, and no sane citizen likes it."

The Rochester, N. Y., *Post-Express* goes a step further when it says:

"The service of public utilities being absolutely indispensable to the convenience and prosperity of communities, there has come to be a feeling on the part of thoughtful people that they should be given fair play and fair pay."

And the leading paper in Manchester, N. H., takes the stand:

"It is good to see that the gas companies of the country have the 'punch' to try to wake up the politicians, business interests and the general public as to the fuel situation. No doubt these big corporations are looking out for their own business, but it happens well that in so doing they are doing something practical to help the whole people."

It remains for the Englewood, Ill., *Times*, however, to hit the nail on the head.

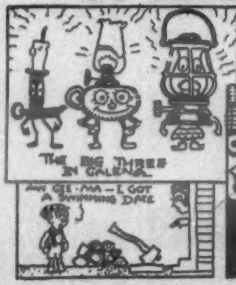
"It is time to quit exploiting ambitious, political and theoretical views," it says, "and get down to a straight business proposition. The people demand service and should have it, and the companies should be allowed sufficient revenue to be able to give it."

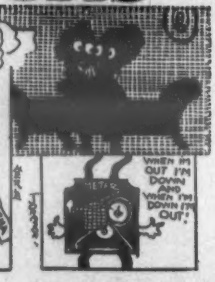
In view of the critical conditions facing a number of companies, it has become necessary for gas men to state their troubles in such a way as will make clear the imminence of the danger confronting the companies and public alike of a stoppage of this essential service. Take, for instance, the utterance of William H. Welch, president of the New York and Richmond Gas Company. He said recently:

"When the company shall have reached a point where it cannot longer pay its operating expenses, and it will therefore be unable to pay for the necessary labor and material and supplies to manufacture and distribute its gas, and its actual cash shall have been exhausted, it will discontinue its operations and it will only resume when it is enabled to receive a price or sum for its gas which will pay such costs and provide a fair and reasonable return on its property actually devoted to the public."

This is a pretty strong notice to serve, but the next day Mr. Welch got the

GALENA • BLEW • OUT • THE • GAS





Galena has blown out the gas!

Since Ulysses S Grant, once the town tanner, gave up his private practice to take up that little task of preserving the Union, as related in all school histories, nothing of such nation-wide interest has emanated from this river city of northwestern Illinois Galena, the oldest city in the state, learned in a few days that one of the most elusive and necessary servants of modern man is gas

Galena hasn't quite gone back to the tallow dips and to hewing down firewood in the manner of its pioneer settlers, but that, perhaps, is partially due to the fact that said pioneers had used up most of the afore-mentioned firewood and had died off, taking with them their secret of making tallow dips of the kitchen leavings

Refuse to Cook for Man Who Made Town Gasless

Through the hot summer days its housewives swelter at their cooking over coal or wood fire ranges—bought at 1920 prices—those who have any stoves at all The women who just won't roast themselves cooking with antique equipment for men who were not foresighted enough to save the gas before it was too late, have fled to other cities In practically every kitchen, beside the insufferably hot coal range or the smelly oil stove, stands a gas range, like the little tin soldier, covered with dust and rust, awaiting the return of gas

As evening's shadows melt into night's darkness, the Galena windows are not suffused with the mellow glow from the gas mantle Not to any appreciable extent are they suffused with any kind of glow Kerosene lamps smoke and flare in hundreds of households, and when there is a sudden gust of wind, the lamp chimneys blacken or crack as the mood and wind strike them. And the housekeepers, accustomed for years to dependable gas light, slam down their newspapers or books in despair and go to bed early Summer daylight has helped some, but as the months of early darkness approach, the gloom of the Galena populace thickens to a consistency that could be cut only with a knife

Great Joy for the Spooners

Of course, spooners are excepted They don't care how dark the front parlor is at night. No complaint has been registered by swingers, either Galena is not the City of Dreadful Night, but the rate of peevishness has risen to an alarming height

The illuminating situation is bad enough, but it isn't as provoking as the cooking problem Going back to the dark ages involves more than having to do without light by which to eat up late Maybe what helped make the Dark Ages dark was the digestions ruined by cooking over primitive fires. Summing up the temper of the cook and the diner The modern housewife, accustomed to a modernly equipped kitchen, with a handy gas stove that can be turned on when wanted, and turned off when not shudders at the thought even of stoking a coal or wood range when temper and temperature are at the boiling over point

Keeping the Old Gas Stove Ready

Women, as the chief sufferers, are keeping their old gas stoves ready for the joyous moment when the gas is miraculously restored A Presidential candidate, who could guarantee the return of the old reliable gas, could carry Galena unanimously, regardless of his stand on suffrage, prohibition or the League of Nations The women, who have had to go back to the coal range or the oil stoves, which flavor the food with a touch of petroleum, are in rebellion, and those who have shiny, new electric cookers are not convinced and huddle their wired stoves without enthusiasm That ever-ready and always reliable gas flame that will broil a 1920 steak just to the right nicety, or turn out a pie that will smother Friend Husband's grouch in its very luciousness, is worth the price, they feel, and Home without it has a big, big void

Galena was not always Gasless Town It didn't voluntarily elect itself as a horrible example of what a modern city is like, when it reverts to the Light of Other Days In had gas for illuminating and fuel from the year that its then leading citizen who had become General U S Grant settled that little matter with Lee at Appomatox, until February, 1920 And persons with even the shortest of memories recall that that was a right cold February

Long Story Told in Short

How Galena stepped on the gas until it hurt is a long story, but it can be recounted briefly to illustrate this tale which has no gas illumination The year Grant finished the job under the old apple tree the possession in Galena of a gas-illumined house was greater evidence of a regular bank balance than the ownership of a gas-propelled limousine is today Gas retailed then at $5 a thousand cubic feet, and that rate was not considered excessive

As gas manufacture became more scientific and more economical, the local gas company voluntarily reduced the rate until 1912, when Galena business houses and users of gas ranges paid only $1.30 a thousand, while light consumers got off with a charge of $1.65 In 1914 an explosion necessitated rebuilding much of the plant at great expense Then came the world war,—prices for coal, coke and oil soared and shipments became increasingly difficult to obtain The Illinois Public Utilities Commission, while recognizing fully the company's difficulties, reduced the gas rate to $1.40 net for the first thousand cubic feet, the rate ranging downward to $1.20 a thousand to large consumers The prices for essential gas-making materials increased to the point where the operators had to seek relief The Utilities Commission, in view of the facts, raised the rate to $1.65

Plant Went Into Receivership

But this new rate failed to make gas selling a paying proposition, and the plant went into the hands of a receiver Experts called in by the receiver reported a big deficit Then Galena's citizens saw the light they felt they soon weren't going to see and petitioned the Utilities Commission to do anything—even to raising the rates—if they only could be assured of gas But the Commission denied their plea and the plant, the second oldest in the state, was forced to shut down.

And then, Galena's Gasless Age began Fortunately for the residents, this city does not have the big acreage of apartment houses to be found in scores of larger cities all over the country In most of Galena's homes there are chimneys and flues, while to the majority of homes in cities like New York, Brooklyn, Boston, and Chicago, there is no provision for the coal stove Loss of gas service in such circumstances would mean actual cooked food deprivation before other means of cooking could be provided

This story of gasless Galena has been prepared for the press of the country by the Emergency Committee of the American Gas Association

A cartoon by Ireland, appearing in the *Columbus Dispatch*. The caption reads: "Are you fellows trying to spoil my summer?"

following support from a newspaper serving his customers:

"It would seem that it is about time for the introduction of horse sense into municipal and State administration. The effort to keep down the prices of transportation and other public utilities in the face of the obvious impossibility of meeting expenses under increased costs of operation and production stamp the instigators as idiots or unmitigated demagogues—perhaps both."

And shortly before this an influential New York newspaper, commenting on Ralph Elsman's statement to the public that the Kings County Lighting Company was on the verge of suspension, said editorially:

"A Kings county gas company serving 250,000 consumers is going broke and has announced it must quit business, and the worst of it is that from experience with bankrupt street car lines the corporation's patrons know it may do exactly as it says."

The gas man's word is no longer taken with a grain of salt. It is believed.

Viewing the gas situation as a whole, developments during the past month have been of more than usual interest. Hardly a week passes by but what one or more companies are forced to suspend operations because of financial difficulties or inability to receive coal and oil. In Painesville, Ohio, the local company closed its plant because of lack of fuel and we read that "hardware stores are swept clean of oil stoves by housewives and cooking is going on in a large park where some natural gas is obtainable. A dozen hot plates are in use and dozens of housewives, lugging baskets of food, take turns at cooking." This is a picture that impresses itself vividly upon the imagination of the housewife, who has no desire to do her cooking in a public park.

One of the most significant news items of the month comes from Indianapolis, where the national and international balloon races scheduled for September 11 and October 13 are to be held. It takes gas to make a balloon race, but J. Dorsey Forrest, president of the Citizens Gas Company refuses, under the present condition of fuel shortage, to furnish gas for such a purpose.

"There is no city in the United States that should, under present conditions, undertake to provide gas for this purpose," says Mr. Forrest. He told the race officials that the use of coal and oil for such a purpose would be "criminal." From late reports published in the press, it seems that thirteen cities, including those as far west as Los Angeles and Seattle have been queried by the Aero Club of America in an attempt to locate sufficient gas to insure the start of the race. The voice of the gas man is being heard from quarters heretofore undreamed of.

The seriousness of the oil situation has again been brought to the forefront by the statement made by R. L. Welch, counsel for the American Petroleum Institute, which is reproduced in part

NEW GAS RATES

AUTHORIZED BY

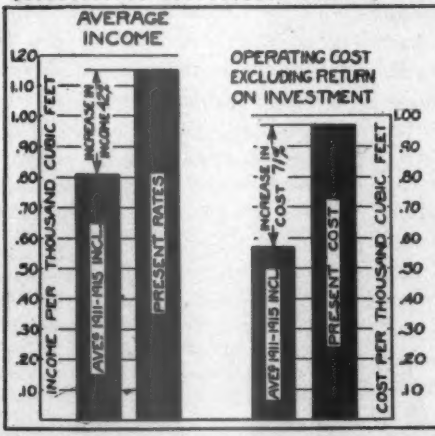
STATE PUBLIC UTILITIES COMMISSION

Effective on all bills rendered for meters read on and after June 16th, 1920.

The Peoples Gas Light & Coke Co.
MICHIGAN AT ADAMS
Tel. Wabash 6000

Could You Afford to Trade $1.25 for 85 Cents

?



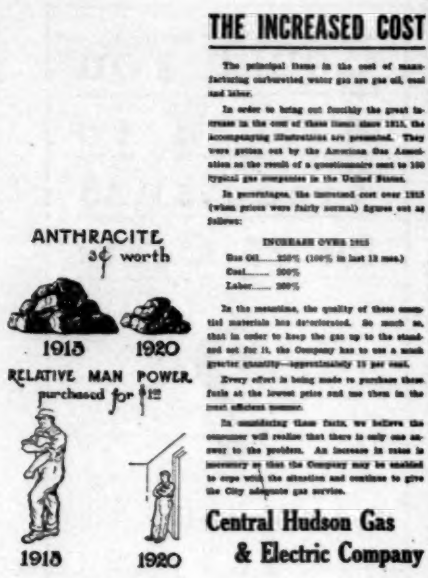
This Chart Shows:

The cost of manufacture jumps 71% or 42½c per thousand cubic feet.

The selling price per thousand is increased 42% or 35c per thousand cubic feet.

The company will still carry 7½c per thousand on the increased cost of manufacture.

To retain the good will of its customers, the Peoples Gas Light and Coke Company, of Chicago, believes it is as important to use publicity after it received its rate increase as it did before. Copies of the two booklets and notice shown above will be loaned to company members upon request.


THE INCREASED COST
The principal items in the cost of manufacturing carbureted water gas are gas oil, coal and labor.
In order to bring out forcibly the great increase in the cost of these items since 1913, the accompanying illustrations are presented. They were gotten out by the American Gas Association as the result of a questionnaire sent to 100 typical gas companies in the United States.
In percentages, the increased cost over 1913 (when prices were fairly normal) figures out as follows:
INCREASE OVER 1913
Gas Oil.....250% (100% in last 12 mos.)
Coal.....200%
Labor.....200%
In the meantime, the quality of these essential materials has deteriorated. So much so, that in order to keep the gas up to the standard set for it, the Company has to use a much greater quantity—approximately 15 per cent.
Every effort is being made to purchase these fuels at the lowest price and use them in the most efficient manner.
In considering these facts, we believe the consumer will realize that there is only one answer to the problem. An increase in rates is necessary so that the Company may be enabled to cope with the situation and continue to give the City adequate gas service.
Central Hudson Gas & Electric Company
ANTHRACITE
3¢ worth
1913
1920
RELATIVE MAN POWER purchased for $12
1913
1920

On the reverse side of its gas bills for the month of July, the Central Hudson Gas and Electric Company, of Newburgh, N. Y., carries this important message to its consumers.

elsewhere in this issue, and by the action taken by the motorists of Spokane, Washington, in pledging themselves to save gasoline. One newspaper says that "since food is the primary physical need of mankind, gasoline for agricultural uses and gas for cooking are perhaps the first things to be considered in distribution of these vital products."

It seems that some temporary relief at least has been obtained as the result of the recent priority orders issued by the Interstate Commerce Commission, but the coal situation still remains a menace so far as a large number of companies are concerned. The situation in Canada appears to be very serious indeed and consumers are asked to practice economy in the use of gas or go without it this coming winter. Frequent protests are being made to Washington against the exportation of coal, some of the more recent of these coming from Senator Calder of New York, who, as chairman of the Senate Committee on Reconstruction and Production, held hearings in New York for the purpose of relieving the acute coal crisis existing there, and from Louis J. Hill, chairman of the board of the Great Northern Railroad.

In the field of finance, we are informed by the *Wall Street Journal* that public utility bonds have sunk to a record low level. This fact has been seized upon by the press to drive home the truth to thoughtful people that they should demand fairer treatment for the utilities.

"The time has gone by," says one newspaper, "for the silly and obsolete policy of holding utilities literally to early agreements, charter provisions, and the like respecting their rate of charge. Conditions are now different and if they were suffered to adjust their charge in proportion to the changing value of money it would in most cases be higher than the proposed enlargements."

The same thought is borne out in striking manner by the *New York Globe* in commenting on Judge Hand's decision in giving the Consolidated Gas Company a rate of $1.20, calculated to earn 8.1 per cent. return on the company investment. It says:

> The decision of Judge Hand indicates that the Consolidated Gas Company supplies Manhattan at a cost of 75.18 cents per 1,000 cubic feet, making 1.2 per cent. upon its investment. No company can continue business on such a basis. . . . Doubtless these organizations have their faults and their incompetencies. They can hardly be accused of the faults of 1900. If they are to continue rendering public service, they must render it at cost plus a fair profit, and they must be treated on a basis of their present plants and organizations, not on a basis of past errors and malpractice. Such treatment is the obvious intent of Judge Hand's decision."

The work now being vigorously prosecuted by the Emergency Committee of

(*Continued on page 556*)

GENERAL

CHAIRMEN OF GENERAL COMMITTEES ORGANIZED TO DATE

National Bureau of Standards (Advisory Committee)—O. H. FOGG, New York, N. Y.
Accident Prevention—JAMES B. DOUGLAS, Philadelphia, Pa.
Amendments to Constitution—WM. J. CLARK, Mt. Vernon, N. Y.
Chamber of Commerce, Membership in—CAPT. WM. E. MCKAY, Boston, Mass.
Calorific Standards—J. B KLUMPP, Philadelphia, Pa.
Central Development and Testing Laboratory—W. H. GARTLEY, Philadelphia, Pa.
Co-operation With Educational Institutions—C. A. MUNROE.
Educational—WALTON CLARK, Philadelphia, Pa.
Emergency Committee—P. H. GADSDEN.
Finance—E. H. ROSENQUEST, New York, N. Y.
Gas & Electric Service (National)—W. R. ADDICKS New York City.
Gas Oil Committee—J. B, KLUMPP.
Gas Securities—RANDAL MORGAN, Philadelphia, Pa.
Funds for Gas & Electric Service—H. L. DOHERTY, New York, N. Y.
National Fire Protection Assn., Membership in—W. R. ADDICKS, New York, N. Y.
Relations with Other Assns., etc. (Formation of Geographic and Company Sections)—L. R. DUTTON, Jenkintown, Pa.
Standard Gas Appliance Specifications—W. T. RASCH, New York, N. Y.
Standard Pipe Threads (International)—W. CULLEN MORRIS, New York, N. Y.
Taxation—P. H. GADSDEN, Philadelphia, Pa.

Philadelphia Gets a B. T. U. Standard of 530

ONE of the most important recent developments in the gas situation has been the action taken by the City Council of Philadelphia in adopting an ordinance suspending the 22 candle-power standard and fixing the minimum B. t. u. standard of 530. This ordinance has been signed by Mayor Moore and has become operative.

On May 19, 1920, President Bodine of the United Gas Improvement Company wrote a letter to the Mayor requesting that the provisions in Clause 9 of an agreement made between the city and the gas company in 1897 be temporarily suspended until future orders of Council and that the B. t. u. standard be substituted for the candle-power standard then in effect.

The ordinance as adopted meets this request and provides that the provisions of Clause 9 of the agreement between the City of Philadelphia and the United Gas Improvement Company, dated November 12, 1897, concerning the lease of the Philadelphia Gas Works, in so far only as it requires the furnishing of gas of 22 candle-power, "be temporarily suspended until January 1, 1921, unless such suspension be sooner terminated by ordinance or resolution of this Council."

Two further provisions are made, first, that the agreement between city and company "shall in all respects remain valid, effective and of full force and shall not be altered or modified in any way except as hereinbefore specifically provided," and, second, "that the change in the agreement as aforesaid shall be conditioned upon the Company executing an agreement with the City of Philadelphia containing such terms and conditions, including a minimum requirement of 530 for daily average British thermal unit, as the Mayor may consider to be fair and just under all the circumstances."

Mayor Moore requested President Bodine to advise him if the impending change in standards would add to the cost of gas to the consumer or work any diminution of service. President Bodine's reply was as follows:

"Only 2 per cent. of gas sold in this city is used for illuminating purposes in the open flame burner and only such consumers will be affected by the change in the candle-power, and this can be met here as it is now being met in Baltimore and other cities under similar conditions by the sale to the consumer of a recently perfected burner known as the 'Thrift Burner,' at a cost of fifteen cents. By such a change the consumer will not only get considerably more light, but the saving in the consumption of gas will offset the cost of the burner.

"'The balance of the gas consumed is used in ranges, water heaters and other appliances where heat value produces the efficiency; we believe that the greater uniformity in heat units, which will result from this new standard, and which is not possible when candle-power is the standard, will result in at least as satisfactory service to our consumers without increased cost. We base this belief upon the best information obtainable of the experience in other cities.

"The suspension of the candle-power requirement is made necessary by the increasing scarcity of gas oil, and is intended primarily to enable the company to begin at once to accumulate a supply of oil to protect its service next winter, when the demand for gas is at a maximum and the daily consumption of oil is double what it is now.

"Such a suspension should make possible some accumulation of the supply of oil which will be necessary when the winter difficulties of delivery by tank steamer may be expected to emphasize the troubles due to the increasing scarcity of the oil itself, and is the only further precaution possible against the very real danger of inability to provide a continuous gas supply next winter when the people of Philadelphia, because of the shortage of railroad facilities for the transportation of coal, will be more dependent than ever upon gas for the preparation of their daily food.

"The ordinance now under your consideration is by its terms only effective until January 1, 1921, and meantime, is revocable at the will of City Council.

"To provide for the possibility that after a fair trial you shall conclude that a suspension of the candle-power standard is not in the interest of the city, a provision might be included in the agreement that the Mayor shall have the right to cancel it at any time during its term in the event that The United Gas Improvement Company shall fail to consent to such modification of any of its provisions as the Mayor may deem fair and just. This would reinstate the candle-power standard, as specified in the lease.

"We are very jealous of the reputation which we have built up by so many years of good service, and feel it is not unreasonable to ask that both the city and our consumers rely upon us to do nothing which would diminish the high quality of the service heretofore rendered by us or disturb our very cordial relations with our consumers."

"We must have gas for cooking, in practically every part of the city. It is not a luxury. It is a necessity. If it can be shown that the only way to keep the gas plant on a safe basis is to put the rates up, it is better to pay a little extra charge for gas than to run the risk of having the whole city cut off, some day, without any gas supply of any kind. Even if cooking coal were plentiful in this city—and we all know that it isn't—most of the cooking ranges in Richmond are made to burn gas, only, and couldn't use coal."—Editorial, Richmond (Va.) *Item.*

Going Strong

THE applications for gas company memberships received since July 9th, whose names are sub-joined, testify to the steadily increasing appreciation of the work being performed by the A. G. A.

The energy and hard work focussed on the immediate needs of the industry through the A. G. A. Emergency Committee, as well as through other channels, are bringing their reward to the men who have been and still are sacrificing their time and money by serving on committees devoted to the solution of gas business problems.

No business improperly or inefficiently conducted can grow and become a permanent institution. The A. G. A. is a business and a growing one, only because it is properly and efficiently conducted.

One hundred and ten gas companies, 5 holding companies, 30 manufacturers and 389 individual members have joined the Association since January 1. Henry L. Doherty said a short time ago: "It seems to me that any gas company, large or small, which does not recognize the wisdom and the business advantages from a dollars and cents standpoint, of holding membership in the American Gas Association, is not fully alive to the business conditions which confront us."

We often wonder whether the management of non-member gas companies who have so far withheld their support, realize to what extent they might advance their own interests by aiding the Association in its efforts to benefit the gas business.

Is it not time every gas company in this country realized its responsibility to its own industry ?

New Members Enrolled in the American Gas Association, Inc.

July 10, — August 9, 1920.

GAS COMPANY MEMBERS

Poudre Valley Gas Co.....A. B. McKibbin, Fort Collins, Colo.
Wallingford Gas Light Co.....E. M. Addis, Wallingford, Conn.
U. & C. Railway, Gas & Elec. Co.....F. W. Bedard, Champaign, Ill.
Danville St. Railway & Light Co.....J. E. Johnson, Danville, Ill.
Galesburg Ry., Lighting & Power Co.....R. F. Carley, Galesburg, Ill.
Wakefield Municipal Light Plant.....C. S. Spaulding, Wakefield, Mass.
Lockport Light, Heat & Power Co.....J. A. Perkins, Lockport, N. Y.
York Gas Co. .....O. H. Heckert, York, Pa.
Porto Rico Gas Co.....R. M. Redding, San Juan, P. R.

MANUFACTURERS

Eastman Manufacturing Co. .....J. Peter Eastman, Manitowoc, Wis.
Missouri Fire Brick Co.....J. F. Walsh, St. Louis, Mo.
West Gas Improvement Co. of America.....F. J. Kennedy, New York, N. Y.

Active Members

New York (2)
Santiago, Chile (1)
Ohio (1)

New Jersey Gas Association Fully Alive to its Responsibilities

A MEETING of the New Jersey State Gas Association was held on July 23 at the Hotel Monterey, Asbury Park, and was attended by approximately seventy-five members and guests.

The discussion on the reduction of the B. t. u. standard in New Jersey was very general, at the termination of which President F. R. Cutcheon appointed a committee consisting of Messrs. H. D. Whitcomb, S. J. Franklin, and Charles W. Hoy to appear before the Public Utilities Commission of New Jersey, at Trenton, on July 28 for the purpose of fixing a B. t. u. standard for the State.

Mr. Phillip H. Gadsden, Chairman of the Emergency Committee of the American Gas Association, on account of an important meeting at Washington, was unable to attend but Mr. Percy H. Hall of the A. G. A. Headquarters staff, presented a message from Mr. Gadsden. He emphasized the critical situation confronting gas companies and suggested the need of complete co-operation in carrying out the program adopted by the Emergency Committee on May 26.

Mr. Hall also reviewed the work of the A. G. A. for the past year, calling particular attention to the important matters which had been undertaken.

Mr. W. Griffin Gribbel, Chairman of the Manufacturers' Section of the American Gas Association, spoke of the relationship of the manufacturer to the gas interests and the present emergency confronting the gas business from the manufacturers' standpoint.

The meeting was commented on as being one of the best ever held by the New Jersey State Association.

Priority of Car Assignment for Movement of Bituminous Coal to Utilities Extended to September 18

The Interstate Commerce Commission on August 10 issued an order which will continue their Service Order No. 9 in effect up until September 18. This order gives priority to public utilities for assignment of cars for their daily requirements of bituminous coal when proper written application has been made for such cars, as covered in I. C. C. Service Order No. 9.

"We hold no brief for any public utility, but just imagine if you can, what a howl there would be in this city if some privately owned water company would give the people the abominable service which we now have to put up with."—Editorial, Sullivan (Ill.) *Progress.*

Accident Prevention Committee

Goggles and Respirators

One of the peculiar features of modern industrial life is found in the fact that while most men, of their own accord and without regard for appearance, will wear old clothes and tattered shoes at their work, they will object strenuously to wearing any appliance, no matter how vital to their safety or health it may be, that in any way may affect their personal appearance so far as their faces are concerned.

In this fact lies the difficulty in inducing men to wear goggles and respirators at their work. The fact that "they look funny" seems, in the minds of many workmen, to justify them in their attitude of discarding goggles and respirators at the first opportunity. Naturally, such action on their part results in eye injuries and other troubles due to the inhalation of gases and dusts that could have been prevented.

In this connection, an article written by W. S. von Bermuth, Safety Inspector of the Hudson Motor Car Company, in a recent issue of *Safety Engineering*, is to the point. In part, he has the following to say regarding the "Psychology of the Goggle Problem:"

> In the course of my duties here, I have had occasion to stop dozens of men who were either grinding without goggles or were about to do so. The excuses offered have run quite evenly, and I am listing them with the arguments I have found to be effective in disposing of the particular objections offered to the use of the goggles.

1. I have no time to get goggles.

> This is a very common excuse, and one which it is quite easy to dissipate. If signs have been posted over all the grinding wheels to the effect that men grinding without goggles will be discharged (and they are in all modern shops), I point to the sign and ask him whether he has more time to get goggles *now*, or would rather take more time to look for a new job *to-morrow*. In nine cases out of ten, the man will grin, and then go and get a pair of goggles from the toolcrib. But always remember, the voice with the smile wins.

2. I was grinding for a minute.

> This is a common remark also. When this excuse is offered, my answer is, "No matter how short a time you may be expecting to grind, you can lose your eye in less time." In most cases the logic of this statement is too plain to fail in results.

3. This goggle business is all nonsense.

> Several have said this. The cure is simple. Let them seek employment elsewhere where the employer will feel the same way. Such men are a needless source of worry and expense to any concern.

4. I have just come in and did not see the sign.

> This may or may not be the truth; most likely it is not, because the signs should be of such a design and be so placed as to make it impossible for a new man to fail to observe them. A warning should suffice in this case.

5. There are no more goggles to be had.

This puts the responsibility squarely up to the employer—to the Safety Department, in particular. It is our business to see that the men are provided with goggles and there can, therefore, be no excuse for any shortage. Order ahead.

Evasions will vary with the work the men are doing, but the excuses cited above are most common in general machine shop work. Patience, education and discipline can alone bring about the happy time when men all wear goggles all the time their eyes are in danger.

Exactly the same arguments raised against the wearing of goggles by workmen are met where conditions require the use of respirators, although to a lesser degree, the most common complaints against the wearing of respirators being that they "look queer," and that they are uncomfortable. While these excuses, and they are only excuses and not reasons, may be perfectly logical and true, it is none the less true that where conditions make it necessary to wear respirators to prevent injury or disease due to the inhalation of gases or dusts, the men should be carefully and painstakingly instructed in their use and the effects that will follow if the respirators are not worn while engaged in such work.

The problem is one difficult to solve, but it can be solved. Education, persistent and with a full knowledge of the likes and dislikes of the workmen, is the only way in which to overcome their objections to the wearing of goggles and respirators or masks. It is one that must be met with frankness; careful study of the reasons advanced by the men for their not wearing them should be made in the endeavor to ascertain if they are real reasons or merely excuses. Improvements can be made only as the result of such study and the results of such study will be shown in a lessened ratio of accidents due to injuries resulting from the non-use of goggles and respirators and masks.

Accidents That Could Have Been Prevented

In order to reach some bolts on a high shelf, a carpenter stepped on a pile of fitting bins. The pile toppled over and the carpenter injured his side.

An accident that might have been avoided if the carpenter had taken the time to get a ladder. When reaching for materials stored above head level, it is important to have a secure footing.

After filling a tank car with sulphuric acid, a laborer turned air into the line before disconnecting it from the car, with the result that acid was blown over the laborer's body, causing severe burns.

A little forethought would have saved this workman from a painful injury. This accident might have resulted in the loss of his sight if the acid had splashed in his eyes.

While a lamp trimmer was working on a ladder, the side rails of the ladder broke, throwing the trimmer to the ground.

This workman must have known that the ladder was defective and should have reported its condition. Ladders and tools should be periodically inspected to see that they are in good condition. Any found defective or unsafe to use should either be discarded or repaired immediately.

Solder splashed in a repairman's eye while he was dipping a meter.

When working with hot solder, goggles should be worn. Contact with even the minutest drop of moisture will cause hot solder to fly in all directions with sufficient force to cause painful injuries to those in the path of the flying metal.

Nominations for Officers and Directors

To All Members of the American Gas Association:

In accordance with the by-laws of the American Gas Association, the Nominating Committee, consisting of Charles H. Nettleton, Chairman, and Messrs. Jansen Haines, L. B. Young, John Gribbel, E. H. Earnshaw and A. F. Staniford, duly appointed by the Executive Session of the Association on October 14, 1919, have submitted the following recommendations for officers for the ensuing year, eight directors for two year term and one director to fill unexpired term for one year.

OFFICERS

For President.....Charles A. Munroe, Chicago, Ill.
For Vice-President.....Howard Bruce, Baltimore, Md.
For Treasurer.....H. M. Brundage, New York, N. Y.
Directors to Serve Two Years:
Samuel T. Bodine.....Philadelphia, Pa
Henry L. Doherty.....New York, N. Y.
Thomas N. McCarter.....Newark, N. J.
Emerson McMillin.....New York, N. Y.
George D. Roper.....Rockford, Ill.
W. G. Gribbel.....Philadelphia, Pa.
R. C. Congdon.....Atlanta, Ga.
L. R. Dutton.....Jenkintown, Pa.
Director to Serve One Year:
F. H. Knapp.....Pittsburg, Pa.
(To fill unexpired term of Howard Bruce, nominated for Vice-President)

These nominations will be presented for election at the November Convention.

OSCAR H. FOGG,
Secretary-Manager.

Reports of Committees on Work Completion Schedules and Compensation of Salesmen Are Now Available

The various committees of the Commercial Section have been hard at work since last October studying the various commercial problems assigned to them.

Two of these reports have been completed and copies will be mailed to members upon receipt of written request made to Association headquarters.

The reports now available are "Compensation of Salesmen" and "Work Completion Schedules." These committees have made an exhaustive study of their respective subjects. Every gas company manager should secure and carefully study these reports, for they contain facts and recommendations which are of interest and value to the industry.

Committee Reports to be Available Prior to November Convention

A new departure will be made this year in distributing copies of Committee reports in advance of the annual Convention.

Heretofore the practice has been to distribute papers and reports at the time of the Convention, but it is considered advisable to place in the hands of members who request them copies of these reports as soon as printed.

By this means the valuable information collected by the committee will become available prior to the meetings and the industry will benefit immediately from such recommendations as may be contained in the reports.

Associations Affiliated with A. G. A.

Canadian Gas Association

Pres.—V. S. McIntyre, Kitchener, Ont.
V.-Pres.—C. S. Bagg, Montreal, Que.
E. H. Caughell, St. Thomas, Ont.
Sec.-Tr.—G. W. Allen, 19 Toronto St., Toronto, Can.
Conv., 1920, Aug. 27-28—Ottawa.

Empire State Gas & Electric Association

Pres.—Horace L. Mann, Buffalo, N. Y.
V.-Pres.—H. W. Peck,
C. G. M. Thomas.
Treas.—E. H. Rosenquest.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.

Illinois Gas Association

Pres.—W. M. Willett, Aurora, Ill.
Sec.-Tr.—R. V. Prather, DeWitt-Smith Bldg., Springfield, Ill.
Conv., 1921.

Indiana Gas Association

Pres.—W. W. Goodrich, Winchester, Ind.
V.-Pres.—J. D. Forrest.
Sec.-Tr.—E. J. Burke, Citizens Gas Co., Indianapolis, Ind.
Conv., 1921.

Iowa District Gas Association

Pres.—W. W. Taylor, Omaha, Neb.
Sec. Tr.—H. R. Sterrett, Des Moines Gas Co., Des Moines, Ia.
Conv., 1921.

Michigan Gas Association

Pres.—E. C. Campbell, Benton Harbor, Mich.
V.-Pres.—J. W. Batten, Detroit, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., 1920.

Missouri Association of Public Utilities

Pres.—J. M. Scott, Kansas City, Mo.
V.-Pres.—L. P. Andrews,
H. Spoehrer,
Col. P. J. Kealy.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Chmn. Affiliation Com.—Wiley F. Corl, 315 N. 12th St., St. Louis, Mo.

New England Association of Gas Engineers

Pres.—W. F. Norton, Nashua, N. H.
V.-Pres.—V. E. Bird, New London, Ct.
Burton Smart, Portland. Me.
Sec.-Tr.—J. L. Tudbury, Salem Gas Light Co., Salem, Mass.
Conv., 1921.

New England Gas Sales Association

Gov.—William Gould, Boston, Mass.
Sec.—H. J. Pettengill, Jr., Woonsocket, R. I.
Treas.—W. T. Pease, Boston, Mass.

New Jersey State Gas Association

Pres.—F. R. Cutcheon, Long Branch, N. J.
V.-Pres.—Jacob B. Jones, Bridgeton, N. J.
Sec.-Tr.—H. E. Mason, Consolidated Gas Co. of N. J., Long Branch, N. J.
Conv., 1921.

Pacific Coast Gas Association

Pres.—A. B. Day, Los Angeles, Calif.
V.-Pres.—L. B. Jones, San Francisco, Calif.
Sec.-Tr.—Henry Bostwick, 445 Sutter St., San Francisco, Calif.
Conv., 1920, Sept. 21-24—Portland, Ore.

Pennsylvania Gas Association

Pres.—J. H. Keppleman, Reading, Pa.
V.-Pres.—E. L. Smith, Towanda, Pa.
Luther Gaston, Lebanon, Pa.
Sec.-Tr.—W. O. Lamson, Chester County Gas Co., West Chester, Pa.
Conv., 1921.

South Central Gas Association

(formerly Texas Gas Association)
Pres.—P. E. Nicholls, Galveston, Texas.
V.-Pres.—C. B. McKinney, Dallas, Texas.
F. L. Weisser, San Antonio, Texas.
Sec.-Tr.—C. H. Seidenglanz, 1501 Commerce St., Dallas, Texas.
Conv., 1920.

Southern Gas Association

Pres.—E. C. Stothart, Charleston, S. C.
1st V.-Pres.—J. A. Forney, Charlotte, N. C.
2d V.-Pres.—J. C. Nichols, Bluefield, W. Va.
Sec.-Tr.—M. A. Bowlin, 218 W. Forsyth St., Jacksonville, Fla.
Conv., 1921.

Wisconsin Gas Association

Pres.—Bruno Rahn, Milwaukee, Wis.
Sec.-Tr.—Henry Harman, 182 Wisconsin St., Milwaukee, Wis.
Conv., 1921.

OTHER ASSOCIATIONS

Natural Gas Association of America

Pres.—Harry J. Hoover, Cincinnati, Ohio.
Sec.-Tr.—Wm. B. Way, 904-5 Oliver Bldg., Pittsburgh, Pa.
Conv., 1921—Cincinnati, Ohio.

Society of Gas Lighting

Pres.—Alex. H. Strecker, Newark, N. J.
V.-Pres.—W. Cullen Morris.
Sec.—Geo. G. Ramsdell, 130 E. 15th St., New York, N. Y.
Treas.—Wm. J. Welsh.
Conv., 1920.

Southwestern Electrical and Gas Association

Pres.—Burr Martin, Dallas, Texas.
V.-Pres.—A. Hardgrave,
C. E. Corder,
A. H. Warren.
Sec.—H. S. Cooper, Slaughter Bldg., Dallas, Texas.
Treas.—J. B. Walker.
Conv., 1921.

ACCOUNTING SECTION

A. P. POST, Chairman — A. L. TOSSELL, Vice-Chairman

H. W. HARTMAN, Acting Secretary

MANAGING COMMITTEE — 1 20

At Large

ALDEN, CHARLES A., Boston, Mass.
BRUNDAGE, H. M., New York, N. Y.
ERICKSON, HALFORD, Louisville, Ky.
PETTES, W. H., Newark, N. J.
POST, A. P., Philadelphia, Pa.
REES, RICHARD, (Mfr.) Kalamazoo, Mich.
SCHMIDT, WM., Jr., Baltimore, Md.
SCOBELL, E. C., Rochester, N. Y.
TOSSELL, A. L., Chicago, Ill.

Representing Affiliated Societies

ARMSTRONG, J. J., Toronto, Can. (Canada)
CHAPIN, C. H. B., New York, N. Y. (Empire State G. & E. Ass'n.)
EATON, H. M., Detroit, Mich. (Michigan)
HAASE, EWALD, Milwaukee, Wisc. (Wisconsin)
HOUGHTON, W. E., Los Angeles, Cal. (Pacific Coast)
HOY, CHAS. W., Glassboro, N. J. (New Jersey)
JAMES, F. M., Aurora, Ill (Illinois)
MAYNARD, H. B., Waterloo, Iowa. (Iowa)
MCCABE, J. B., Dallas, Texas. (South Central)
NORTON, W. F., Nashua, N. H. (N. E. Gas Eng.)
PORTER, EDW., Philadelphia, Pa. (Pennsylvania)
SHEARON, B. P., Hammond, Ind. (Indiana)
STOTHART, R. C., Charleston, S. C. (Southern)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Automobile Cost Accounting—S. J. PALMER, Chicago, Ill.
Merchandise Accounting—W. A. SAUER, Chicago, Ill.
Job Order Systems—W. G. STERRETT, Chester, Pa. Vice-Chairman, F. M. JAMES, Aurora, Ill.
Office Labor Saving Devices—J. L. CONOVER, Newark, N. J.
Papers—H. M. BRUNDAGE, New York, N. Y.
State Representatives—J. W. HEINS, Philadelphia, Pa.
Uniform Classification of Accounts and Form of Annual Report to Public Service Commissions—W. J. MEYERS, New York, N. Y.
Uniform Accounting Nomenclature—W. H. PETTES, Newark, N. J.

Modern Journals for Corporation Accounting, Article III

By EMIL ULBRICHT

IN the last decade or two, the organization of public utilities brought into common usage the method of operating through leaseholds the plant and property of companies already established. The instrument by which the operations are turned over by the Lessor to the Lessee is termed the Lease and the right to operate such properties extends over a period of years, and occasionally perpetually. The tendency of the Utility Commissioners of the several states in recent years has been to limit them to a shorter term, such limitations in many cases being based upon the maturity dates of the underlying securities.

In the lease, provision is usually made for the payment during such agreement of a rental fixed by a percentage, equivalent to a dividend, upon the outstanding capital stock, interest upon the bonded indebtedness and an amount, payable either annually or semi-annually, to cover the cost of maintaining the corporate organization. In addition the Lessee is required to pay the taxes, insurance and such other expenses as are necessary to keep the property in good condition. While title to the property does not pass to the Lessee upon the execution of the lease, however, the current assets, such as cash, accounts receivable, materials and supplies etc., are taken over and the current liabilities, as for instance, accounts payable, notes payable, etc., assumed. The difference between the respective groups is taken up in a lease account, representing either a charge or a credit to the Lessor or at the option of the Lessee, charged or credited to

surplus.

Figure J is an illustration of a schedule embodying the requirements suitable for a journal to record the rentals paid for leased properties. With the aid of a rubber stamp the title of the journal is completed by the insertion of "Rental for Lease of Other Gas Plant and Equipment." The number of the schedule would also be inserted as well as the names of the accounts to be debited or credited, provision for the latter being made in the space in lower left-hand corner. The totals of the various monthly columns furnish the entries for both the detail and general ledgers, the schedule being arranged to show in addition the names of the indicant accounts. Let us assume that in leasing the National Gas Company it has been agreed upon in consideration of the privilege to operate the property to pay as rental an amount equivalent to the interest on $100,000.00. First Mortgage Bonds, bearing interest at five (5%) per cent. per annum, payable semi-annually, a guaranteed dividend, payable quarterly on the outstanding common capital stock of $100,000.00 at the rate of six (6%) per cent. per annum and $100.00 per annum for the maintenance fee. In the column "Description of Rentals" the information inserted would be as follows:—

National Gas Company
First Mortgage Bonds
Outstanding $100,000.00.
Rate 5% Payable Jan. 1st and July 1st.
Common Capital Stock
Outstanding $100,000.00.
Rate 6% Payable March 15th Quarterly
Maintenance Fee
$100.00 per annum Jan. 1st.

The accrual for the month of January for bond interest would be $416.67, the dividend, $500.00 and the maintenance fee, $16.67 with such adjustments during the period of accrual as are necessary to make them equivalent to the amount of payments. At the end of June there will have been accrued for bond interest $2,500.00. Upon its payment the date and amount would be entered in the proper columns. The accrual for July would be entered upon the following line and continued thereon until the payment in December. This method permits the crossfooting of the accruals to the individual payments.

As the last payment of the quarterly dividend was made on December 15th $250.00, equivalent to one-half month's accrual, would be carried forward from the previous year's schedule. The full month's accruals would be made in

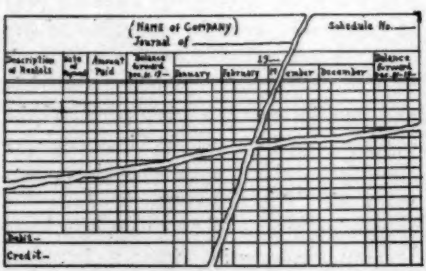


Fig. J.

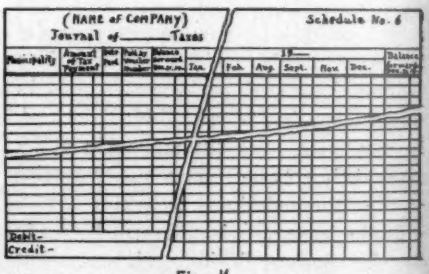


Fig. K.

January and February but the entry for March would be divided so as to show the accrual to March 15th. The remainder of the accrual, or one-half month, would be entered upon the line below, this portion applying to the next quarterly payment. As in the case where semi-annual payments are made, two lines are required, or, I might say, desirable; then it becomes apparent that, if the payments are quarterly, four lines are used. In the accrual for the maintenance fee only one line is necessary.

By a change in the name of the journal and number, in addition to the names of the proper accounts affected by the transactions, the form can be

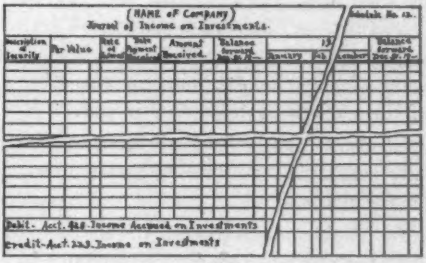

(NAME of COMPANY)
Journal of Income on Investments.
Schedule No. 12.
Debit - Acct. 418 - Income Accrued on Investments
Credit - Acct. 223 - Income on Investments

Fig. M.

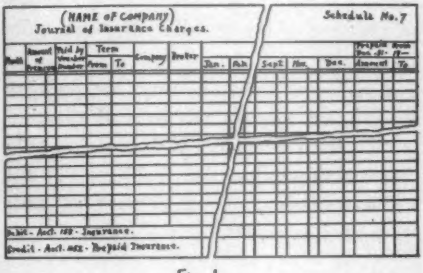

(NAME of COMPANY)
Journal of Insurance Charges.
Schedule No. 7
Debit - Acct. 189 - Insurance.
Credit - Acct. 182 - Prepaid Insurance.

Fig. L.

successfully used to record accruals and payments for miscellaneous rent deductions and interest on miscellaneous obligations, such as mortgages payable, notes payable, etc.

Figure K is that of a schedule which can be satisfactorily used for all taxes, including Federal taxes, with which utilities are confronted. By completing the name of the schedule and filling in the names of the accounts to be debited and credited, it can be used for either accrued or prepaid taxes, the account to be credited indicating the class of tax.

At the beginning of each fiscal year the amount of tax which the utility company estimated it would have to pay would be determined and the monthly proportion entered in the proper column, the total of these several detail items forming the basis of the entry for each particular class of tax. These accruals would continue until such time as information had been received as to the exact amount or the tax bill received and paid. There seems to be a difference of opinion as to the method of making the adjustment of the discrepancy which invariably exists between the amount estimated and the actual bill. Some contend that the entire adjustment should be made in the month when the exact amount becomes known and the accrual for the remaining months of the year adjusted to an amount equivalent to one-twelfth of the annual charge. Others spread the adjustment over the remaining months of the year.

A schedule which provides for the apportionment and entry for expired insurance is shown in Figure L. Upon payment of the invoice covering insurance that portion of the charge which is applicable to the current year is apportioned over the months affected. The remainder, if any, is carried to the last

(*Continued on page 556*)

A Survey of Mechanical Addressing Systems

By JOHN L. CONOVER, Chairman, Committee on Office Labor Saving Devices.

AT the last convention of the American Gas Association several requests were made of the Committee on Office Labor Saving Devices for a more detailed discussion on the subject of mechanical addressing systems. There is presented in this article an arrangement of the principal points of operation of the various systems now in use.

So far as can be learned, these are the only mechanical addressing systems now on the market.

A tabular arrangement of the facts has been deemed best for convenience in grasping the principles of the various systems. The number at the head of each column is representative of a particular system.

Where several types of machines fall under one classification a letter has been assigned each type.

The addressing situation in many companies is in a critical state due to the retention of obsolescent equipment. Many installations that were made eight or ten years ago are now more than ready for the scrap heap. In addition to being worn out, such machines are now likely to be mechanically out of date, for progress has not been a stranger in the addressing field.

Moreover, many gas companies, which in the past have not used an addressing system, are developing to the point where mechanical addressing makes for economy.

Conditions like these cannot but direct the manager's thoughts to the systems that are on the market to-day with a view to the ultimate purchase of new equipment or the installation of an entire system.

Prudence demands that the problem be studied long in advance of the time action is to be taken; and, it seems to be foreordained that the problem will rise to harry every gas executive at some time in his career.

	Metal plate system	Fibre stencil systems		
	1	2	3	4
Addressing medium.	Embossed metal plate. Variety of styles, one-piece unframed plate to sectional plate in frame containing card specimen of imprint.	Japanese gelatine-coated stencil paper. Cardboard frame.	Japanese fibre silk stencil paper, Cardboard frame.	Japanese stencil paper. Cardboard frame.
Provisions for changes on addressing medium.	Reblanking of one-piece plates. On sectional plates, meter, consumer or account number changes are made largely by inter-changing the plate-sections between the two plates involved or between the plate and the file of retained plate-sections.	Chemical solution for making partial or complete change in stencil.	Chemical solution for making partial or complete change in stencil.	

	Metal plate system	Fibre stencil systems		
	1	2	3	4
Filing features of addressing medium.	Signal tabs fit in sockets on metal frame. Geographical, alphabetical, numerical or other captions.	Inverted stencil serves as guide card. Card frames supplied in eight different colors. Printing on card frame possible.	Linen stickers for numerical, alphabetical, etc., classifications. Index cards of various colors with tabs. Stencils in ten different colors. Stencils may be notched in twelve classifications. Special combination stencil and index card obtainable.	Stencils of various colors. May be printed or written upon.
Plate embossers and stencilers.	A-Hand operated machine for small lists. Embossing done by dies in revolving drum. B-Same as above, electrically operated.	A-Typewriter used in connection with small moistening machine. B-Special Gothic letter stenciler. Perforating principle. Dial and indicator. Hand lever. C-Same. Foot lever. D-Same. Motor drive. E-Same. Keyboard. Motor drive.	Typewriter, used in connection with moistener.	Typewriter, used in connection with moistener.
Type styles.	Choice of six styles similar to typewritten script. Special numbers obtainable for payroll work.	A-As typewritten on stencil. B-Gothic, if stenciled by special perforating stenciler.	As typewritten on stencil.	As typewritten on stencil.
Hand operated addressers for small lists.	A-Ribbon printing. Quadruple-platen obtainable for cut-out printing. Control for single, duplicate or triplicate impressions. Dating attachment. Lister for payroll or meter-reading sheets. Automatic ejector for envelopes B-Special machine for printing of shipping tags.	A-Rubber rotary platen. Ink printing. Automatic ejector for envelopes. B-Special machine for printing of shipping tags.	A-Rubber rotary platen. Ink printing. Automatic ejector for envelopes. B-Special machine for printing of shipping tags.	A-Rubber rotary platen. Ink printing. Control for single or duplicate impressions. B-Special machine for tags and postal cards.
Foot operated addresser.	Same as electric drive excepting motivity.	Same as electric drive excepting motivity.		
Electric drive addresser.	A-Hand fed, ink print. Speed control. Control for single, duplicate or triplicate impressions. Counter. Dater. Lister for pay rolls or meter-reading sheets. Automatic selector. Platen cut-out for deletion of part of plate. B-Hand fed. Ribbon print. Same special features as next above. C-Automatic feed for envelopes and cards. D-Automatic feed for bills. Single, duplicate and triplicate impressions.	A-Hand fed. Ink print. Speed control. Control for single and duplicate impresions. Counter. Dater. Lister for payrolls or meter-reading sheets. Automatic selector. Cut-out for deletion of part of stencil. B-Automatic feed for bills, single, duplicate and triplicate impressions.	A-Hand fed. Ink print. Speed control. Control for single, duplicate or triplicate impressions. Counter. Dater. Lister for payroll or meter-reading sheets. Skipping device. B-High speed, hand-fed rotary. Special automatic envelope feed attachments. C-Special addresser for combination filing card and address stencil.	

	Metal plate system	Fibre stencil systems		
	1	2	3	4
Printing impressions.	Descending superimposed platen. Paper feeds above stencil. Ribbon or ink print. Visibility at printing point.	Paper feeds under stencil. Inked rubber roller passes over stencil. Visibility at printing point. Ink supplied from reservoir. Addressed matter issued from machine with address side up.	Descending platen, superimposed over rubber roller. Paper feeds above stencil. Ink print. Visibility at printing point.	
Printing of partial lists by automatic selection.	Twelve classifications of plates possible. Addresser prints desired classification according to tabs on plate frame.	Nine classifications of stencils possible. Addresser prints desired classification according to notches in stencil frame.		
Filing trays & cabinets.	Steel trays. Wood or steel units of various sizes.	Steel trays. Wood or steel units of various sizes.	Steel trays. Wood or steel units of various sizes.	

The mechanical addressing system has injected itself deeply into the gas accounting organization. The manager constantly turns to it for assistance in accomplishing various classes of work. There are cases where the cost of securing data or performing special work would place the project beyond the pale of possibilities were the addressing equipment not available.

The most frequent use for the system in the gas business is for the addressing of meter reading sheets and monthly bills, but the system is not limited to that use. Other fields in which it does a great service are:

1. In making a check of meters in service by printing a list of consumers with the record of meters used on their premises. This list is checked as of a given date against the meter records.

2. In transferring accounts from old to new ledgers by printing consumers' names, addresses, account numbers and meter numbers.

3. In addressing advertising literature. The use of the selector is particularly advantageous for this work. By this method plates or stencils are tabbed or notched according to classifications supplied by the sales or collection forces. With ten or a dozen classifications territory may be circularized for the various kinds of appliances with a minimum of waste in printed matter and postage. The information regarding the consumers' needs is coded on the plates or stencils through the use of tabs or notches or the plate or stencil. When a certain appliance is to be circularized the printing machines are adjusted to print only the plate or stencils indicated by tabs or notches to be "prospects" for the appliance. Machines which do not have this automatic selective feature print and skip at the operator's volition through the use of signaling tabs of various colors.

It is not desired to advance herein claims for the superiority of one class of recording medium over the other or to compare the efficacy of the roller platen with that of the flat platen and descending head. There is a multiplicity of

points involved in the structure and operation of the various machines. Even a superficial examination of the data presented will indicate the futility of a controversial treatment of the subject. An effort has been made merely to present an unbiassed statement of the facts regarding each system based on information supplied through the courtesy of the manufacturers.

The data given is by no means exhaustive. The manufacturers market other types of machines and attachments which are not mentioned, having been built for the requirements of other businesses.

However, those who are considering or are about to consider either a first installation of addressing equipment or a change of equipment may gain from the table initial information concerning the utility of the various systems on the market. In this regard it should be borne in mind that the manufacturers are equipped to adapt their standard types of machines and attachments to special requirements.

Speed in operation is a factor that has been ignored in the table. The manufacturers' claims vary from 1000 impressions an hour for hand-operated addressers to 10,000 an hour for the automatic feed machine. The stenciling and embossing machines are rated at from 320 three-line plates or stencils daily for the hand-operated machines to 1000 three-line plates for the motor-driven stencilers and embossers.

On all of these addressing machines, speed in operation is dependent upon the skill of the operator and the makeup, size and style of matter to be addressed. The mechanical handicap in the running speed of the addressers is negligible, as the machines will address almost as rapidly as matter can be supplied by hand-feeding. They can be geared for variable speeds and undoubtedly in addressing for short periods or on test their performance may amount to a corroboration of the enthusiastic claims of the manufacturers. Undoubtedly managers who have had experience with the work will be gratified to obtain from any of these systems for an extended period a fraction of the catalogue rating in average printing impressions per hour.

Figures showing the possibilities of speed of various office appliances often dazzle one. Without attempting to discredit the statements of the manufacturers, it may be hazarded with more than a modicum of truth that it would be fallacious indeed for a manager, estimating on an installation, to base his calculations for continuous service on the catalogue ratings. Misunderstanding of the capabilities of office appliances is the rule rather than the exception.

Actually there may be no cause for complaint should a manager ascertain that his printing department is operating at about one-fourth of the catalogue efficiency. It may merely mean that he has a liberal margin of mechanical safety in turning out his monthly work. This is a good condition even if it does cause a little capital to lie idle. Addressing work, especially where there is a high labor turnover may at times become a thing of constantly recurring crises. Then extra equipment is a boon.

In deciding upon the number of machines necessary to perform a given number of impressions for each month, a safe way to provide for an adequate margin of safety is to divide the figures in the catalogue by two or even three. One can safely count on 1000 impressions per machine per hour in the case of a motor-driven hand-fed addresser. The catalogue may say 2000 or even

4000 but to hope for these results as an average would be a trifle too sanguine. So long as we have machines to adjust, oil and clean, motors that need attention, belts that break, and operators who are human, the catalogue performances will be hard to attain except for short periods.

Upkeep and repair service is furnished by the addressing machine manufacturers through branch offices located in various parts of the United States. Plate or stencil-making service is also supplied to companies which do not wish to do this part of their own work, this latter service being designed especially to reach the smaller companies which do not wish to install the special machinery sometimes necessary for this work.

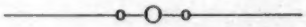
In choosing a system from among those on the market the initial cost of machines is an item that assumes a lessening importance as investigation advances. One of the most difficult questions to decide upon is whether the addressing medium to be adopted will be the paper stencil or the metal plate. At best on most of the points involved there will be difficulty in obtaining other than approximate data on which to base a decision for the knowledge of most consultants is garnered from experience with one system only.

In addition to the cost of equipment a few of the points to be considered carefully and in a comparative way are: cost of plates or stencils; labor cost in cutting or embossing plates or stencils; adaptability of plate or stencil for partial changes; durability of plate or stencil; adaptability of plate or stencil for filing purposes and ready reference; weight of plate or stencil and space required for filing; appearance of impressions; peculiarities of impression mechanism; adjustability of impression mechanism; effect of use of plate or stencil on machine depreciation; listing performance of machines; efficiency of machines for selective printing; cost and availability of addressing machine company's stencil-cutting or plate-embossing service; availability of qualified operators.

(*Continued from page 551*)

column for transfer to the insurance schedule for the subsequent year and apportioned over the several months.

Figure M is a schedule which provides for the accrual of income on investments. The headings of the various columns are self-explanatory and the manner of handling the accruals and receipts differs in no way with the explanations made of similar schedules.



(*Continued from page 540*)

the A. G. A. in co-operation with the various State organizations, is beginning to show results. Everywhere the gas man is evidencing a greater interest in publicity and is fighting his fight like a good soldier. He is not fighting it entirely alone, however. A considerable part of the public is backing him up and the newspapers which are read by that public—the thinking public—are also with him. Now is the time for him to push forward with more vigor than ever. Let your voice be heard.

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CHAS. W. PERSON, Secretary

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Making Your Customers Preferred Partners In Your Business

IN an endeavor to make its customers preferred partners in its business, the Philadelphia Suburban Gas and Electric Company has recently entered upon a campaign to dispose of an issue of $800,000 of 7 per cent. cumulative preferred stock.

The methods pursued by the company in this sales campaign, as well as its literature and follow-up system, not only strike a new note in gas company financing but are of interest to those in the industry who may be contemplating similar work. The accompanying illustration shows the two booklets that are issued, the customer ownership and subscription certificates and a printed notice advising the purpose for which the money is being spent. It is impossible to show the stubs which are attached to the customer ownership certificate to take care of payments. This system was prepared by W. G. Sterrett, assistant manager of the company at Chester, Pa., and the form of the certificate itself as well as other details relating to the campaign were worked out by L. R. Dutton, division manager.

"We believe in creating a condition whereby our customers are partners in our business," says the booklet entitled "The Wage of the Dollar." Progressive public service companies, it goes on to say, are now building up large lists of home share owners, "who are preferred partners in the business and who receive the dividends which otherwise would go to the professional investor."

These statements are preceded by some excellent articles—all of them short and to the point—on thrift, the dollar versus labor, collateral, speculation versus investment and the difference between preferred stock and bonds.

In order to place the stock within reach of the man with small means, the company permits payments to be made in ten dollar installments. Those desiring to subscribe in this manner are issued the customer's ownership certificate upon receipt of the first ten dollar payment. When the second and following payments

are made, the coupon is torn off the folder and left with the cashier and a customer's receipt is given with the corresponding number on the back of the certificate.

Part of the follow-up system is to arouse interest among neighbors. One week after the booklet "The Wage of the Dollar" is sent out with a map showing the company's distribution system and the territory covered, and the customer has had an opportunity to read it, there is mailed to a selected list of one to every three or four customers along a block a subscription certificate giving the privilege to subscribe or pass it over to some one else.

The purpose of this selected list of subscribers is to arouse interest among neighbors by having one consumer, perhaps in conversation with his neighbors, advise that he has a certificate and this leads to an inquiry from the man who does not have one. Needless to say, some valuable publicity is secured in this manner.

The subscription certificate is accompanied by a slip containing a picture of gas holders and buildings. Consumers seeing these holders and buildings thus have a visual confirmation of how the money is to be spent. At the bottom of this slip is a request that the certificate be returned in the enclosed envelope in case it is not used, which leads one to believe that it is of value, inasmuch as the envelope has a two-cent stamp affixed to it.

There are a number of other commendable features regarding the methods of popularizing the sale of the issue that represent considerable study and effort on the part of those responsible for it. At this writing it is too early to gauge the success of the campaign but $20,000 of sales were made the first week the booklets were issued.

Although the idea of customer ownership is not entirely new, its importance has not been grasped fully by utility companies until of comparatively recent date. The methods employed by the Philadelphia Suburban Gas and Electric Company are worthy of note from the standpoint of originality if from no other, and the officials charged with this sales campaign are to be congratulated for their courage in breaking away from the beaten path of utility financing and of trying to carry out a plan which offers greater potentialities if it is successful.

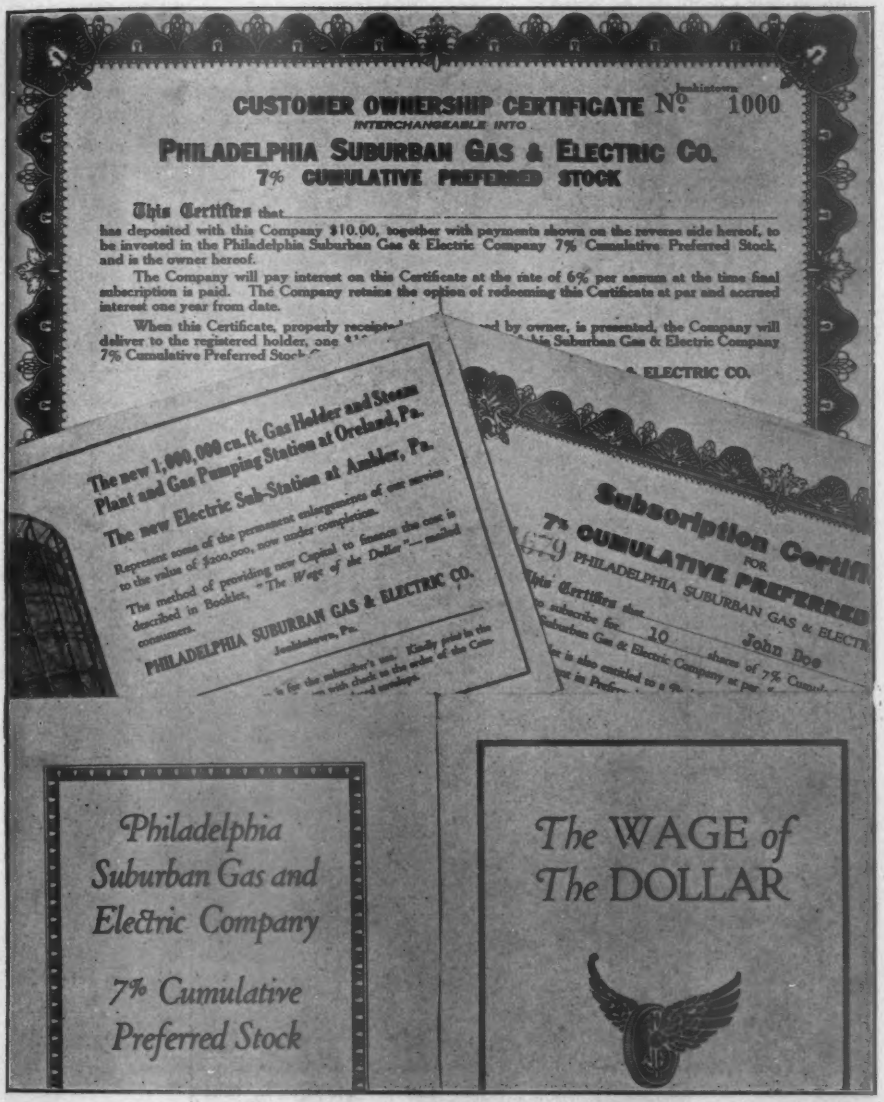
A Valuable Publicity Service for Gas Companies

THE Balopticon, an automatic stereopticon machine shown in the accompanying illustrations, has been purchased by the A. G. A. for the use of its member companies on a rental basis of $15 a week plus delivery charges from New York to point of destination and return.

As set forth in a recent form letter issued to all member companies, the machine has a ground glass front upon which is projected reproductions of photographs, drawings and messages from regular lantern slides displayed one after the other by an automatic device. It is simple to set up and to operate. After it is attached to a light socket it needs no further attention; and it projects slides just as effectively in the daytime as it does at night.

The Adirondack Power and Light Corporation, of Schenectady, N. Y., is the first company to order the machine. They are using it at this writing (July 30) for a period of one week. It then

(*Continued on page 560*)


CUSTOMER OWNERSHIP CERTIFICATE No. 1000
INTERCHANGEABLE INTO
PHILADELPHIA SUBURBAN GAS & ELECTRIC CO.
7% CUMULATIVE PREFERRED STOCK
This Certifies that
has deposited with this Company $10.00, together with payments shown on the reverse side hereof, to be invested in the Philadelphia Suburban Gas & Electric Company 7% Cumulative Preferred Stock, and is the owner hereof.
The Company will pay interest on this Certificate at the rate of 6% per annum at the time final subscription is paid. The Company retains the option of redeeming this Certificate at par and accrued interest one year from date.
When this Certificate, properly receipted
deliver to the registered holder, one
7% Cumulative Preferred Stock
ELECTRIC CO.
The new 1,000,000 cu. ft. Gas Holder and Steam Plant and Gas Pumping Station at Oreland, Pa.
The new Electric Sub-Station at Ambler, Pa.
Represent some of the permanent enlargements of our service to the value of $400,000, now under completion.
The method of providing new Capital to finance the cost is described in Booklet, "The Wage of the Dollar"—mailed consumers.
PHILADELPHIA SUBURBAN GAS & ELECTRIC CO.
Subscription Certif
FOR
7% CUMULATIVE PREFERRED
PHILADELPHIA SUBURBAN GAS & ELECTR
This Certifies that
John Doe
to subscribe for 10 shares of 7% Cumul
Suburban Gas & Electric Company at par
Philadelphia Suburban Gas and Electric Company
7% Cumulative Preferred Stock
The WAGE of The DOLLAR

Certificates and literature used by the Philadelphia Suburban Gas and Electric Company to sell its issue of preferred stock. The lower part of the illustration shows the two booklets issued to customers.

(*Continued from page 558*)

goes to the Manchester Traction, Light and Power Company, of Nashua, N. H., for two weeks, and after that to the Wilmington Gas Company, of Wilmington, Del., for another two weeks. Allowing ample time for delays in shipments, the machine is still available for use on and after September 15th, although additional orders will no doubt be received before this issue of the magazine is published.

As part of the service included in the rental price of $15 a week, the Association furnishes with the Balopticon a set of thirty-three slides, a list of which is given below. Other slides may be made locally by the companies and added to this list. The machine wil hold 68 slides in all, and they may be projected in any order desired.

The Balopticon can be used in so many effective ways that it is only possible to mention a few of them here. For instance, it can be set up in the show window or on the sales floor, where it will attract attention immediately. It can be used to illustrate talks before meetings of employees, at local gatherings such as civic clubs, Chambers of Commerce, church affairs, or wherever there is an opportunity to give a talk on the company's work or its activities.

If you have a story to tell—and what company has not in these uncertain days?—here is a unique and result-getting way to do it. Try out the Balopticon for a week or two. And by all means send in your order now to make sure of getting the machine this summer.

The Balopticon projects slides just as effectively in the daytime as it does at night.

List of A. G. A. Slides for Use with the Balopticon

Pertinent Facts Concerning the Industry

Fifty million people served with gas.
A plea for an adequate return upon investment.
Needed at once, new capital and heating standards.
Ole Hansen: "Gas companies are fighting for their lives."
What the gas business does in a year.
Gas service in the home.
"Public utility is not a charitable institution"—P. S. C. of Penna.
Chart: Average price of gas.
Chart: Cost of living versus cost of gas.
Present cost of labor (illustrated)—1915-1920.
Gas oil prices (illustrated)—1915-1920.
Bituminous coal (illustrated)—1915-1920.
Anthracite coal (illustrated)—1915-1920.
Price of gas sold, 150 companies.

Pictures of General Interest

A 6,000,00 cubic foot gas holder (colored).
Laying the bottom plate of a modern gas holder (colored).
Safety in gas tube connections (colored).

Water Heaters

Hot water service (colored).
No home hygienic without water heater (colored).
Summer servants (colored).

The All-Gas Kitchen

Coal range versus gas range (colored).
Modern gas kitchen (colored).
Modern kitchen has every convenience (colored).
The All-Gas Kitchen (colored).
The convenience of using gas all year 'round (colored).

The Gas Iron

Demonstration of its use (colored).
Gas iron display (colored).
Use a gas iron (colored).

Laundry

The up-to-date laundry (colored).

Room Heating

The best heat for any room.

Gas Lighting

Gas lamps make the home attractive (colored).
Few types of artistic gas lamps (colored).
The all gas lighted house (colored).

The Balopticon set up for use.

"Our public and our utilities will have to pull together if either is to prosper. They will not prosper separately."—*Collier's Weekly.*

To The Public

We are literally your servants.

Our business is not merely to sell you gas but to give you good gas service.

Do us the favor of selecting our office as the proper place to register complaints.

We invite your help and co-operation at all times. We are always ready to make investigation, and any errors will be promptly rectified.

It is our constant endeavor to give you a service which is complete and satisfactory in every detail. Any employee who fails to recognize this fact and who does not do his utmost to serve you is not rightly representing our company and its policy toward the public.

Our policy: The public is entitled to courteous treatment and to the best possible service.

To Our Employees

YOU are the company.

Treat our customers as you yourself like to be treated. In other words, be courteous.

Courtesy avails much and costs little. It is the most valuable asset you can possess.

By making courtesy a daily habit, you will not only win friends for the company but you will make yourself a better —and better paid—employee.

Disputing with customers is bad business. Assume, always, that the customer is right in his or her complaint until the facts are looked up. If investigation shows no ground for just complaint, make the facts so clear that you will preserve his or her friendship.

Remember that the company's reputation is in your hands. Guard it as you would your own.

(Insert name of your Company here)

MEMBER OF THE AMERICAN GAS ASSOCIATION

Sixth of a series of twelve "good will" advertisements now being prepared for member companies. Price of series complete with matrices in three or four-column newspaper width, $36.00. Price of three-colum electrotypes, $48.00. Orders for single advertisements will also be accepted at $3.00 per matrix and $4.00 per electrotype.

COMMERCIAL SECTION

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BOND, C. O., Philadelphia, Pa.
BUCKMINSTER, ROLLIN, Pawtucket, R. I.
BURNS, J. J., St. Louis, Mo.
CHRISTMAN, H. S., Philadelphia, Pa.
CLARK, H. H., Chicago, Ill.
CLARK, W. J., Mt. Vernon, N. Y.
DAVIES, J. E., Chicago, Ill.
DODSON, H. K., Baltimore, Md.
DOULL, R. S., New York, N. Y.
ELSMAN, RALPH, Brooklyn, N. Y.
GASTON, LUTHER, Spokane, Wash.
GOULD, WM., Boston, Mass.
HUNTER, HARRY W., (Mfr.) Baltimore, Md.
JARDINE, BERT H., Knoxville, Tenn.
JASPERSON, R. O., Chicago, Ill.
KARSHNER G. M., New York, N. Y.
KING, THOMSON, Baltimore, Md.
KNAPP, F. H., (Mfr.) Pittsburgh, Pa.
LOEBELL, H. O., New York, N. Y.
MACSWEENEY, J. P., Rochester, N. Y.
MAXON, H. R., (Mfr.) Muncie, Ind.
MUNROE, C. A., Chicago, Ill.
MYERS, J. B., Philadelphia, Pa.
PEFFLY, I. W., (Mfr.) New York, N. Y.
PETTENGILL, H. J., Jr., Woonsocket, R. I.
PISER, THEO. H., Boston, Mass.
POST, A. P., Philadelphia, Pa.
RASCH, W. T., New York, N. Y.
STANNARD, CLARE N., Denver, Colo.
TRUMBULL, G. R., New York, N. Y.
VINCENT, G. I., Syracuse, N. Y.
WRIGHTINGTON, R. N., Boston, Mass.

Representing Affiliated Societies

BARTON, WM. H., Portland, Ore. (Pacific Coast)
BORDEN, A. W., Hastings, Nebr. (Iowa Dist.)
BOWLIN, M. A., Jacksonville, Fla. (Southern)
BRANDES, JEROME, Chester, Pa. (Pennsylvania)
BURKE, E. J., Indianapolis, Ind. (Indiana)
CHAMBERLAIN, G. R., Grand Rapids, Mich. (Michigan)
CRAFTS, H. C., Pittsfield, Mass. (N. E. Gas Eng.)
FLAUT, J. J., New Orleans, La. (South Central)
HANLAN, J. P., Newark, N. J. (New Jersey)
McINTYRE, W. H., Ont., Can. (Canada)
ST. JOHN, JOHN, Madison, Wisc. (Wisconsin)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Sales Development—WM. GOULD, Boston, Mass.
Compensation (Sub)—G. M. KARSHNER, New York, N. Y.
Filling in the Valleys in Gas and Appliance Sales (Sub)—WM. GOULD, Boston, Mass.
Maintenance (Sub)—ROLLIN BUCKMINISTER, Pawtucket, R. I.
Putting Non-Profitable Consumers on a Profitable Basis (Sub)—B. H. JARDINE, Knoxville, Tenn.
Sales Campaigns (Sub)—H. J. PETTENGILL, Jr., Woonsocket, R. I.
Work Schedule (Sub)—G. I. VINCENT, Syracuse, N. Y.
Gas Lighting THEO. H. PISER, Boston, Mass.
Heating—GEO. E. BENNITT, New York, N. Y.
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Furnace Performance Standards (Sub)—I. LUNDGAARD, Rochester, N. Y.
Improvement of Atmospheric Burners (Sub)—JEROME BRANDES, Chester, Pa.
Proportional Mixing (Sub)—CHAS. C. KRAUSSE, Baltimore, Md.
Recuperation and Regeneration (Sub)—H. O. LOEBELL, New York, N. Y.

12 + 12

WM. GOULD, Chairman, Sales Development Committee

SLOGANS are invented for the purpose of bringing to people's minds, in as few words and signs as possible, basic facts, and aside from the cleverness of their construction, they amount to nothing unless they put across some definite suggestion.

Manufactured gas sales, particularly in the great majority of northern companies, show great monthly variations, and this is, to the writer's mind, an inconsistent one.

Years ago after the gas industry had been founded on gas lighting, the industry made an effort to develop and expand by trying to interest the public in the use of gas for cooking. Many gas companies at that time installed gas ranges free of charge. After the usual hesitancy and antagonism of the public had been somewhat modified, the housewife was further approached with the suggestion that it was unnecessary to use the uncomfortable hot coal range in the summertime. This, as we know, appealed to thousands of housewives, and while it was the start of getting gas ranges into American homes, it certainly

was an unfortunate idea to implant in the housewives' mind, namely, to use the gas range only in the summertime because of the uncomfortable heat a coal range produced.

The inconsistencies in the sales, in the majority of northern companies, of both gas and appliances is a heritage left to our industry through the promulgation of this past suggestion to the housewives to use their gas ranges only in the summertime.

Records of gas companies' output and appliance sales seem to prove the theory of this unfortunate inheritance, because gas companies, as a rule, are selling more gas and appliances in the warmer months than they are in the colder. If we recognize this fact, after having analyzed their source, we have made one step toward correcting it, and if you will look over your gas output curve, you will find in most cases an increase of gas sales in the spring months with a gradual increase up to September. This is particularly true in the companies whose monthly manufacture is up to 100,000,000 cu. ft. per month. If you will look at your October sales of gas, in the majority of cases, you will find a falling off. This, to the writer's mind, appears to be because gas ranges and water heaters are used in the early summer months, where they have not been used in the previous cold months; and the decrease in output in October seems to show that cold weather is accounting for the discarding of gas ranges and gas water heaters by the substitution of coal ranges.

A significant fact that may be of interest to you is that the sales of gas appliances in most gas companies seem to be larger when the output is larger. Expressing it in another way, the sales of gas appliances, as are the sales of gas, are much larger in the class of companies above mentioned in the warmer and lighter months of the year, than they are in the winter months. The differences in output between the summer and winter months show variations running up to 147 per cent.; that is, the highest months' output shows 147 per cent. increase over the lowest months' sales.

In regard to the appliance sales, a variation up to 150 per cent. exists in many companies between their highest and lowest months' business. "12 + 12" is a suggested slogan which is intended to convey to gas companies and gas appliance manufacturers the necessity of active and enthusiastic sales effort during the entire twelve months of the year, with facts and instructions to go with these sales that will show the gas company customers the convenience and economy of using these appliances every month in the year. The gas room heater is an exception to this rule, but practically all of the other appliances sold can be conveniently and economically used the entire twelve months of the year if proper instructions are given to the American housewife.

Following out the old suggestion of using gas ranges in the summertime, which means only five months out of the twelve, the slogan of "12 + 12" is emphasized to bring to the attention of gas companies and gas manufacturers the necessity of decreasing the variations in both the gas output and appliance sales. This can be done by a continual effort to sell appliances and by consistent advertising during the winter months.

We certainly cannot expect interest and enthusiasm to be shown by our customers in our appliances and gas if we allow our interest and enthusiasm in marketing them to slump during the winter months; and by consistent advertising and selling of appliances and their use

(Continued on page 568)

Recuperators and Regenerators

Second of a series of articles by HENRY O. LOEBELL, Chairman of Sub-Committee on Recuperation and Regeneration.

ARTICLE II.—DESIGN OF RECUPERATORS

IN a previous article we stated that recuperators might be used in connection with furnaces operating at temperatures from 500° F. to 1400° F., these limits being due entirely to the materials available for construction. Metals offer the best material for making recuperators, because they can be made absolutely gas tight, and the material can be very thin, thus offering maximum heat transfer and occupying a minimum of space.

Wrought iron or steel pipe has been used with very good success on a number of recuperators—but as the temperature of operation approaches 1000° F., the metal will be rapidly destroyed by oxidization or corrosion. Cast iron can be used for temperatures up to 1400° F. and will give very satisfactory results both as to first cost and life. Special metals or alloys on the market under various trade names such as Nichrome, Calorized iron, or Monel Metal may be used for higher temperatures, but the first cost will be high and it is difficult to get the necessary special shapes made up. However, there are many cases where it will pay to use recuperators of these special materials.

In Europe they have constructed hundreds of recuperative furnaces in which the recuperators are built of refractory tile. A few attempts have been made to use this type of furnace in this country, but they have met with only partial success. The greatest difficulty has been to make a tile recuperator which would be comparatively tight. Generally the air is under pressure or the flue gases under draft so that there is a tendency for the air to flow through the joints or through the pores of the tile, thus greatly decreasing the efficiency of the recuperator. Another disadvantage of the tile recuperator, is the large space occupied. Great care must be used in heating up or cooling down a furnace equipped with a tile recuperator, because the unequal expansion will crack or break the tile.

With a recuperator we have the advantage of a continuous flow of waste products in one direction and a flow of gas or air to be preheated in the other direction, thus giving the greatest possible efficiency and requiring no reversing mechanism. Another advantage is that we obtain a constant preheat in the air or gas, thus insuring nearly constant furnace temperature which is very necessary in some heating operations.

When we come to the actual design of a recuperator for a given furnace we must have considerable data or base our design on assumptions which must be quite accurate in order that the best results may be had. We must know the temperature at which the waste gases leave the furnace; the analysis of these waste gases; the amount of fuel burned per hour; the calorific value of the fuel; the pressure at which air is available; the temperature of the air; and we may assume a reasonable differential temperature between the flue gases and the air throughout the recuperator.

Experience has shown that the average velocity of the gases and air throughout the gas passages should be about 15 feet per second and under this condition the rate of heat transfer which we may obtain will be about 2.5 B. t. u.'s per hour per sq. ft. of mean surface per degree F

differential temperature between the flue gases and air. Rates of heat transfer as high as 5.5 B. t. u.'s per hour per sq. ft. per degree F. differential have been obtained in practice where a high velocity was maintained in the air by using a positive pressure blower. It is better to use the lower rate of heat transfer and provide more heating surface than to assume a value which cannot be attained in practice, and which leads to disappointment.

In order that a clearer understanding of this problem may be had let us take an actual case and follow the design through in detail. The following data are available from tests made on the furnace before the recuperator was designed and installed.

Kind of fuel used—By-product coke oven gas.
Composition of Gas—

CH_4	33.95%
C_2H_4	5.15%
CO_2	2.56%
CO	6.08%
H_2	47.88%
O_2	0.57%
N_2	3.84%
B. t. u.	600 per cu. ft.

Specific gravity 0.41.
Air required per cu. ft. of gas = 5.24 cu. ft.
Composition of flue gases from burning the above gas with theoretical amount of air:
CO_2 formed per cu. ft. of gas burned ..... = 0.529 cu. ft.
H_2O formed per cu. ft. of gas burned ..... = 1.26 cu. ft.
N_2 present per cu. ft. of gas... = 4.20 cu. ft.
Orsat analysis of flue gases from burning above gas with theoretical amount of air:
$CO_2 = 11.2\%$ $N_2 = 88.8\%$
Temperature of operation of furnace = 1,400° F.
Gas consumption per hour (corrected for P & T) 6,000 cu. ft.
From these data we proceed with the design of the recuperator on the following assumptions.
Temperature of air entering recuperator 70° F.
Temperature of air leaving recuperator 1,000° F.
Temperature of flue gas leaving recuperator 470° F.
Average velocity of air through recuperator 15 ft. per second.
Rate of heat transfer 2.5 B. t. u.'s per hour per sq. ft. per °F. differential

Mean temperature difference =

$$\frac{(1400\text{-}1000) \text{ plus } (470\text{-}70)}{2} = 400°\text{F.}$$

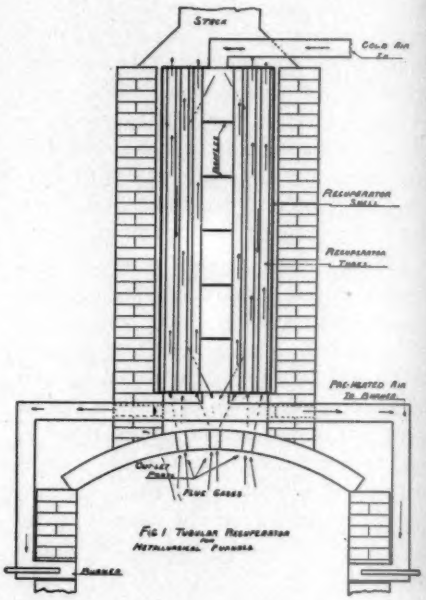


Fig. 1 Tubular Recuperator for Metallurgical Furnace

By referring to Fig. 2 we find that the flue gases from 1 cu. ft. of by-product coke oven gas at 1,400° F., contain 185 B. t. u. per cu. ft. of gas burned. The test before a recuperator was used showed a gas consumption of 6,000 cu. ft. per hour and we will assume 5,000 cu. ft. per hour with a recuperator. Hence total heat leaving the furnace per hour as sensible heat in the flue gases—5,000 × 185 B. t. u. = 925,000 B. t. u.

From the same Fig. 2 we find that the heat at 1,000° F. carried by the air necessary for combustion of 1 cu. ft. of this by-product coke oven gas is 96 B. t. u.

We have assumed that by the use of a recuperator we will decrease the gas consumption to 5,000 cu. ft. per hour, hence the heat returned to the furnace by the air necessary for combustion is $5{,}000 \times 96$ B. t. u. $= 480{,}000$ B. t. u.

If we return 480,000 B. t. u. per hour to the furnace in the preheated air this is equivalent to 800 cu. ft. of 600 B. t. u. gas. Because of the increased flame temperature of the gas when burned with air preheated to 1,000° F. we would be able to carry on our operation at a faster rate or with less gas, hence justifying our assumption that we would save 1,000 cu. ft. per hour by using a properly designed recuperator.

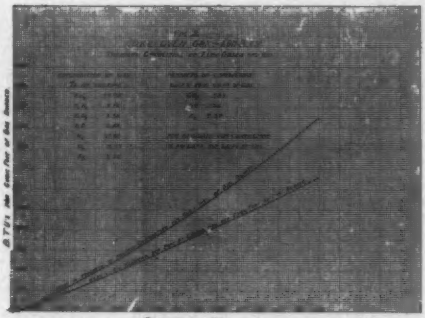
The recuperator surface necessary to transfer 480,000 B. t. u. per hour with a rate of 2.5 B. t. u. per sq. ft. per hour per degree F. differential temperature and a mean differential temperature of 400° is

$$\frac{480{,}000}{2.5 \times 400} = 480 \text{ sq. ft.}$$

For a temperature of 1,400° F. we would have to construct the recuperator of cast iron or some special metal. Standard cast iron radiators may be used for this purpose with very few changes and with very satisfactory results. All that is necessary is to insert cast iron plugs in the manifolds so that the air will have a positive circulation counter-current to the path of the flue gases.

With gas at 65¢ per M cu. ft. and the furnace operated 2,500 hours per year the saving in fuel would be $1,625.00. A cast iron recuperator suitable for the above conditions could be installed and operated at an annual cost of about $600.00, leaving a net profit of approximately $1,000 per year per furnace.

Fig. 1 shows an economical and efficient type of economizer or recuperator. This type of installation is preferable where we have a stack which is directly connected to the flue-gas ports of a furnace as per illustration. In many cases where the stack is large enough the recuperator can be inserted in the base of the chimney, or if necessary the diameter of the base of the stack can be increased.



In this type of recuperator the flue gases pass through the tubular passages of the apparatus, while the air for combustion circulates around these hot flue gas tubes. An installation of this kind would give very good results where the flue gases leave the furnace at 1,200 to 1,400° F. and where the flue gases leave the recuperator at 300 to 500° F.

Fig. 3 shows two views of three radiators connected in parallel to form one recuperator unit. The important factor to be noted is the use of cast iron plugs which prevent the gases from simply short-circuiting from the inlet to the outlet. These cast iron plugs act as baffles that so alter the passage of the air so that it passes over the entire surface area of the recuperator and therefore absorbs the maximum amount of heat. The baffles should be so placed that the velocity of air through the recuperator does not exceed 12 to 15 feet per second.

Recuperators of these general types are economical and practical, and can be utilized on many varieties of furnace installations. The time is coming when practically all heating operations will have some means of utilizing the waste heat in the hot flue gases. Recuperators of the types described in this article will effect a fuel saving of 10% to 25% per furnace and in a large plant this may mean a saving of tens of thousands of dollars a year.

(*Continued from page 564*)

the interest of the consumer will most certainly be maintained.

In the electric industry, it has been figured that the possible electric appliance sales to the American housewife for the next ten years should be $500, or $50 a year. This, of course, is a much larger amount than is actually being put out by the electric industry at the present time.

From information that the writer has received of appliance sales throughout the United States from gas companies who seem to be selling the most, the figure is only about $5.00 per meter per year. This is just a suggestion. There is no question in the writer's mind but what the future development of the gas industry will rest to a large extent in the efficiency of the sales department.

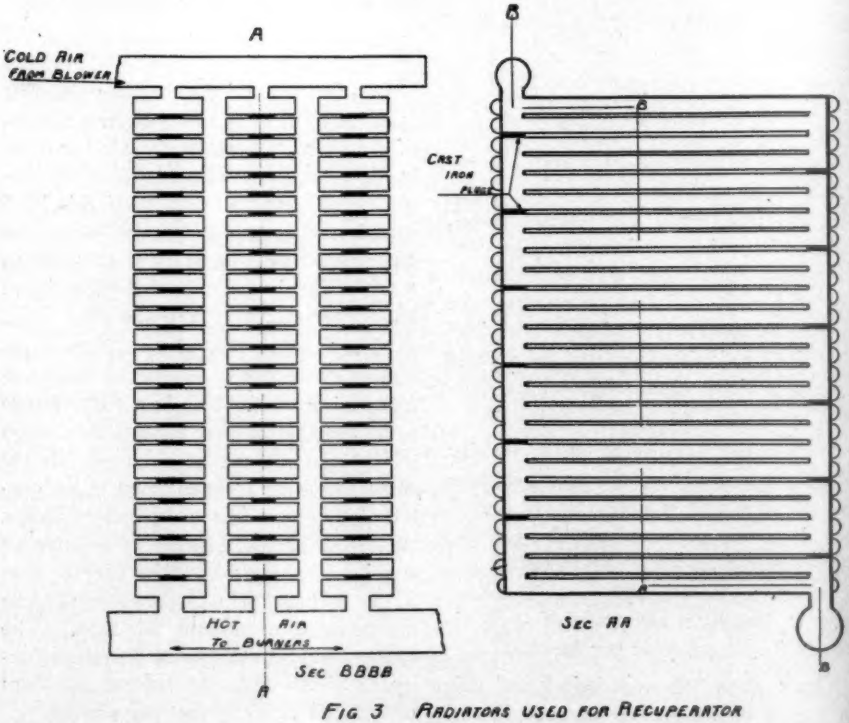
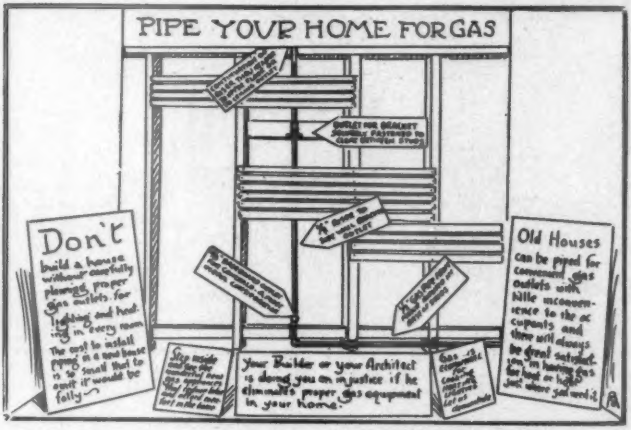


FIG 3 RADIATORS USED FOR RECUPERATOR

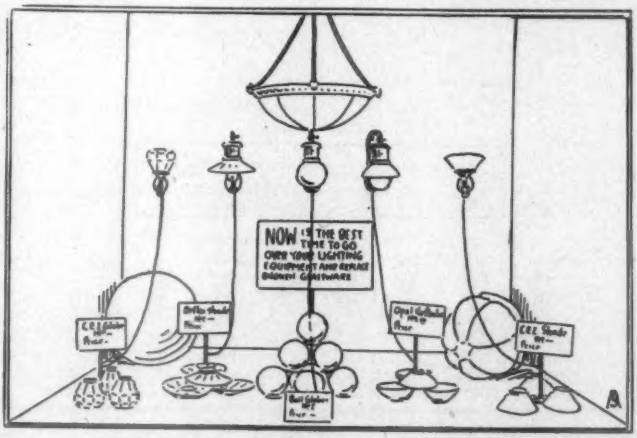
Window Display Suggestions for September


PIPE YOUR HOME FOR GAS
Don't
Old Houses
Your Builder or your Architect is doing you an injustice if he eliminates proper gas equipment in your home.

Display for Third Week in September

18a

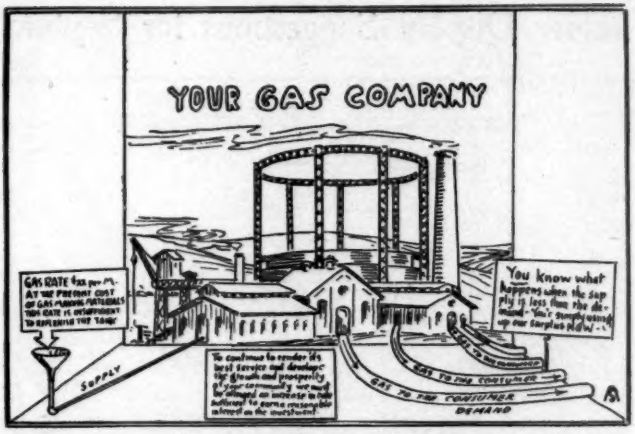
In the rear of the window build up a standard partition framework with two by four studs, headers, lath, etc., with a neat job of gas piping of standard size showing method of notching studs and securing outlets. Each feature is defined by pointer cards clearly worded. The remainder of the display is an assortment of attractive cards worded appropriately.



Display for Fourth Week in September

18b

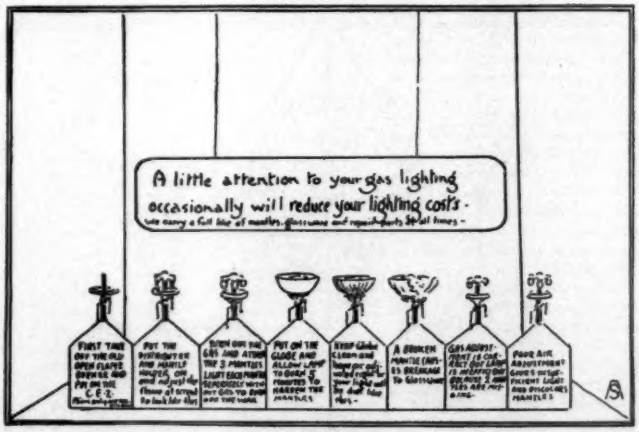
Pipe and connect with gas a line of standard brackets showing different lamps and glassware along the background. Make groups of the different styles of glassware on the floor and tie with colored ribbons to the lamp. Price cards and a general card should be used. A fine semi-direct piece may be added in the center with two or more bowls shown. If the window is large enough a line of mantles, etc., may be added, but do not crowd your window with too much material.



Display for First Week in October

18c

The drawing shows a painted back drop representing a gas plant; a small inlet pipe with funnel from forward left corner to door of plant and several large pipes from other doors of the plant to right side of window. The ends of these pipes should be concealed to appear as if they continued on indefinitely. The cards should be worded according to local conditions. Real pipes are to be used, painted black and lettered in red.



Display for Second Week in October

18d

A pipe with tee outlets and extension nipples is placed along front of window with eight or more lamps attached. These lamps are all of the same type, but they are shown in various stages of assembly and in different conditions. Pointed cards conceal the piping and describe each lamp. A general card is hung from center of window. It is possible to add a line of burners, glassware, mantles, etc., to this exhibit with good effect.

MANUFACTURERS SECTION

W. GRIFFIN GRIBBEL, Chairman **GEORGE S. BARROWS, Vice-Chairman**
W. W. BARNES, Secretary

MANAGING COMMITTEE — 1920

At Large

BARNES, W. W., New York, N. Y.
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BRILL, A. P., Pittsburgh, Pa.
BRUCE, HOWARD, Baltimore, Md.
COLLINS, D. J., Philadelphia, Pa.
CONROY, J. P., New York, N. Y.
CRANE, WM. M., New York, N. Y.
DEHART, J. S., Newark, N. J.
GRIBBEL, W. GRIFFIN, Philadelphia, Pa.
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LOHMEYER, H. B., New York, N. Y.
MASON, SIDNEY, Gloucester, N. J.
NORTON, HARRY A., Boston, Mass.
PEFFLY, IRVING W., New York, N. Y.
REES, RICHARD, Kalamazoo, Mich.
ROBERTS, EARL W., Detroit, Mich.
ROPER, GEO. D., Rockford, Ill.
SCHALL, H. D., Detroit, Mich.
STITES, TOWNSEND, Gloucester, N. J.
WICKHAM, LEIGH, St. Louis, Mo.

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BABCOCK, C. B., San Francisco, Cal. (Pacific Coast)
BARTLETT, C. E., Philadelphia, Pa. (Pennsylvania)
CHAPIN, C. H. B., New York, (Empire State)
ECCLES, GEO. W., Waltham, Mass. (N. E. Gas Eng.)
GIBSON, W. R., Toronto, Can. (Canadian)
HOWSMON, G. M., Atlanta, Ga. (Southern)
LONG, H. J., New Brunswick, N. J. (New Jersey)
MCCULLOUGH, CHAS., Milwaukee, Wis. (Wisconsin)
MILLER, THOS. D., Detroit, Mich. (Illinois)
SEIDENGLANZ, C. H., Dallas, Texas. (So. Central)
SCHALL, H, D., Detroit, Mich. (Michigan)
WARREN, W. M., St. Louis, Mo. (Iowa Dist.)
WESTON, J. A., Lansing, Mich. (Indiana)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Membership—WM. M. CRANE, New York, N. Y.
Apparatus Makers—D. J. COLLINS, Philadelphia, Pa.
Nomination—WM. M. CRANE, New York, N. Y.
Exhibition—W. GRIFFIN GRIBBEL, Philadelphia, Pa.
Illustrated Lectures—GEORGE S. BARROWS, Chairman
Division of Meter Manufacturers—DONALD MCDONALD, Chairman, W. P. HUTCHINSON, Vice-Chairman
Division of Gas Range Manufacturers—WM. M. CRANE, Chairman, I. W. PEFFLY, Vice-Chairman
Division of Water Heater Manufacturers—H. J. LONG, Chairman
Division of Office Labor Saving Devices Manufacturers—H. B. LOHMEYER, Chairman, E. J. FERRIS, Vice-Chairman
Division of Heating Appliance Manufacturers—GEO. S BARROWS, Chairman
Division of Industrial Appliance Manufacturers—S. TULLY WILLSON, Chairman
Division of Lighting Appliance Manufacturers—J. P. CONROY, Chairman
Division of Apparatus & Works Manufacturers—J. S. DEHART, JR., Tempory Chairman
Division of Supply Manufacturers—R. MUELLER, Temporary Chairman
Division of Accessories Manufacturers—B. RYAN, Temporary Chairman

"Success waits upon ability and loyalty, Let's go!"—*Geo. B. Cortelyou*

Company Member

The Seal of

STANDARD PRODUCT AND ASSOCIATION SUPPORT

All company members, Manufacturers Section, are urged to use t he above emblem on all stationery, cat alogues and literature as company members of this Association.

Membership

The Membership Campaign is slowly progressing, each month showing a slight gain in the addition of new companies to our register. Now that the vacation period has terminated we hope that a new impetus will be given to this very important subject, which can attain the desired end before the Convention only through a little team work on the part of the Membership Committee. The members of this Committee are asked to give the support expected of them.

Concerning Our Membership Campaign

Honor Roll

GEORGE W. PARKER,	—	12 Manufacturer Company Members
CLARENCE H. FRENCH,	—	1 Manufacturer Company Member
RICHARD REES,	—	1 Manufacturer Company Member
H. A. NORTON,	—	1 Manufacturer Company Member
J. B. KLUMPP,	—	1 Manufacturer Company Member
HEADQUARTERS,	—	13 Manufacturer Company Members
H. J. LONG,	—	1 Manufacturer Company Member
CHAS. T. AARON,	—	1 Manufacturer Company Member

Trade Conditions

Manufacturers strongly urge gas companies who expect any service this fall not to allow their stocks of gas ranges and other appliances to run low. Owing to the deplorable condition of our railroads serious delays have been prevalent in the movement of freight during the summer months, a period when there always has been a surplus of idle cars. A stock in hand to meet the demand which business conditions warrant this fall is much better than wasting effort in placing orders when your stock is low.

Prompt delivery of purchases from your salesrooms means service to the consumer; it is indeed discouraging where sales have been made to have the purchaser make frequent calls and inquiries when a delivery will be made. This can all be overcome by following the oft quoted maxim "Order Now."

Exhibition

The Exhibition Committee will meet August 18 to confirm the allotments of spaces to exhibitors at the 1920 Exhibition to be held at the Hotel Pennsylvania, New York City, November 15 to 20, 1920.

It has been decided by the Exhibition Committee that after the full allotment of spaces has been made no other applications will be entertained in justice to those who have made their selection. In former years, spaces were improvised for late applicants after the exhibition had closed in its entirety, and these booths were naturally in more desirable locations than some in the original layout. To avoid criticism this year and to assure fairness to early applicants, no provision will be made for any exhibitors after all the spaces have been contracted for.

It is imperative that all who anticipate exhibiting have their applications in the hands of the Secretary of the Manufacturers Section before the Exhibition is closed.

To date the following companies have made application for space which almost completes the diagram as originally laid out:

Young Brothers Co.
B. Ryan Co.
Humphrey Co. Div.
Will W. Barnes
The Baltimore Gas Appliance & Mfg. Co.
General Gas Appliance Co.
Quick Meal Stove Co. Div.
The Crandall Pettee Co.
New Process Stove Co. Div.
Welsbach Co.
The Michigan Stove Co.
Barnett Foundry & Machine Co.
Ruud Manufacturing Co.

Famous Oven Manufacturing Co.
The Kompak Co.
Reliable Stove Co.
William M. Crane Co.
Walker & Pratt Mfg. Co.
Roberts & Mander Stove Co.
George D. Roper Corp.
General Gas Light Co.
A-B Stove Co.
Reznor Mfg. Co.
The Ofeldt Gas Fired Boiler Co., Inc.
Detroit Stove Works
Union Stove Works
Pittsburg Water Heater Co.
Weir Stove Co.
Royal Art Glass Co.
George M. Clark & Co. Div.
The Cleveland Heater Co.
The Improved Appliance Co.
Rathbone, Sard & Co.
The Estate Stove Co.
Burroughs Adding Machine Co.
The Lattimer Stevens Co.
The Cutler-Hammer Mfg. Co.
The Sprague Meter Co.
The Koppers Co.
S. R. Dresser Mfg. Co.
Precision Instrument Co.
Connelly Iron Sponge & Governor Co.
Pittsburgh Meter Co.
The Roberts Brass Mfg. Co.
Quigley Furnace Specialties Co.
Republic Flow Meters Co.
Equitable Meter Co.
John J. Griffin & Co.
The Surface Combustion Co.
The Eclipse Stove Co.
Robertshaw Manufacturing Co.
The Milwaukee Gas Specialty Co.
The G. S. Blodgett Co.
Grinnell Co., Inc.
The A. H. Wolff Gas Radiator Co.
James B. Clow & Sons
The Bryant Heater & Mfg. Co.
The J. H. Grayson Mfg. Co.
National Stove Co.
Underwood Typewriter Co.
Bacharach Industrial Instrument Co.
United Lead Co.
The U. G. I. Contracting Co.
National Tube Co.
American Meter Co.
Metric Metal Works
The Western Gas Construction Co.
The DeMatteis Broiler System Co., Inc.
Johnson Gas Appliance Co.
Monroe Calculating Machine Co.
J. B. Slattery & Bro., Inc.
Comstock Castle Stove Co.
Charles A Hones, Inc.
Superior Meter Co.
Eriez Stove & Mfg. Co.
Kalamazoo Loose Leaf Binder Co.
Strause Gas Iron Co.
Meek Oven Mfg. Co.
Abram Cox Stove Co.
Peninsular Stove Co.
The Hoffman Heater Co.
Elliott-Fisher Co.
H. Mueller Mfg. Co.
Nu Styl Gas Iron Co.
Chambers Mfg. Co.
Lovekin Water Heater Co.
Eastman Mfg. Co.
The Bartlett Hayward Co.

Surface Indications

MANY Gas Sales Managers have the feeling that Manufacturers who sell to them are more inclined to practice co-operation with the Gas Company than Manufacturers who sell to Dealers, Plumbers, Department Stores, etc. This seems plausible, but a study of the facts does not furnish a definite conclusion.

A short time ago a certain Gas Company reduced to the brink of utter disaster by confiscatory rates, with its credit presumably so impaired that it could not purchase the necessary piping and meters of capacity up to the demand of consumers upon its lines and facing the possibility of such loss in pressure within Consumers' Houses as to make pilot lights things of actual danger, circularized its consumers, warning them of the danger of further capacity demands on their present meter installations and seeking to side step responsibility for the consequence of such increases.

Unfortunately this letter was so

worded as to put the Automatic Water Heater, which a Manufacturer was at that time selling through Dealers and Plumbers, in the light of an instrument of death. The Gas Company unquestionably had to choose between the lesser of two evils—killing consumers or killing Automatic Water Heaters for sometime to come. It made its choice, so that story goes, without consulting the Manufacturer of the Water Heaters to his consequent great discomfort. This instance of the frantic extremity a Gas Company can find itself in shows clearly and conclusively the necessity of a working contact between it and Manufacturers of goods consuming its gas.

It is profitless to attempt to "blame" either party to this amazing situation. The facts staring one in the face call for a working contact between the two. They DEMAND it in the light of the better days an informed public seems to promise us. This promise is no vague thing. It is assuming form and substance. It will develop even more clearly in the Spring of 1921 after many communities throughout the country have shivered in cold homes and eaten uncooked food, because the Gas Companies could not secure coal and oil even at the scandalous prices that are now being hinted at.

Now is the time to "hold em." We are in front of our own goal posts. We simply must not weaken with relief in sight. Could there not be established with Gas Companies, Department Stores, Plumbers and Dealers alike, a fixed retail price on Appliances. Would not this wean, the Plumbers particularly, from their present offish position. Would Gas Companies not be willing to act as Storage and Wholesale Distributors to them at such a figure as would include the carrying charge, which the Plumber would have to meet if he stocked the Appliances and leaving to the Plumber his full profit on the sales of Appliances, as well as his natural profit on an installation checked up to the Gas Companies' standard. It would seem that any plan along these lines would, in effect, widen the Gas Companies's selling force.

Manufacturers of Appliances, who sell through Agencies other than the Gas Companies, should see to it that the Gas Company is notified whenever a sale is made in order that the meter be not overloaded and the performance of the Appliance in question killed by an insufficient gas supply. If, for any reason, the Gas Company is so cramped by inadequate rates that it cannot produce more gas and consequently avoids selling more gas, it is incumbent on it to so advise all Manufacturers selling Appliances in the territory.

If the case is squarely presented, the compliance of any intelligent Manufacturer, who has an eye to the future, is almost a foregone conclusion. We must admit the Gas Company is more careful of quality than is the Dealer, whose only object is to turn over his stock. The individual Manufacturer must from his own business perspective make his own choice as to what his action is to be.

It would be an inexcusable error if the Gas Industry on the "eve" of its better days should not take to itself the invigorating stimulus of the merchandiser. Never let us forget that the business of making and distributing gas with its Laboratory and Engineering problems does not develop the mental or physical attitude of the seller of goods. We are perhaps now living in the times when the qualities possessed by the merchandiser

(*Continued on page 593*)

TECHNICAL SECTION

L. R. DUTTON, Chairman — W. S. BLAUVELT, Vice-Chairman

H. W. HARTMAN, Secretary

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CONGDON, R. C., Atlanta, Ga.
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JONES, JACOB B., Bridgeton, N. J. (New Jersey)
LYONS, B. F., Beloit, Wisc. (Wisconsin)
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Refractory Materials—W. H. FULWEILER, Philadelphia, Pa.

Suggested Changes in Making Branch Connections from Existing Cast Iron Mains

THE article "Method of Making Branch Connections from Existing Cast Iron Mains," by H. B. Anderson, of Philadelphia, printed in the August "MONTHLY," is one which I am sure the Committee on Cast Iron Pipe Standards would like to have thoroughly considered by all A. G. A. members. The one reason for the existence of this Committee is that it was realized that no standard would adequately represent the needs of the gas industry that was not capable of quick change in response to any widespread demand for such change. The changes suggested for discussion by Mr. Anderson would mean, for the larger companies, the saving of an appreciable amount of money. Should these changes be made, or are there practical considerations which justify us in adhering to existing standards? I hope that this and succeeding issues of the "MONTHLY" will contain expressions of opinion on this matter from distribution engineers, and also that time may be found at our November meeting to discuss the subject further.

WALTON FORSTALL, *Chairman*,
Committee on Cast Iron Pipe Standards.

Economical Method of Welding Water Gas Generator Cleaning Door Frames

By G. T. MACBETH, Mt. Vernon, N. Y.

AFTER some experiments it has been found possible to weld water gas generator cast iron cleaning door frames in place, with oxygen acetylene apparatus.

This is done by operating the generator up to the time when the welding is to be done. Open the door of the door frame to be welded, rake out all of the dead fire and rake sufficient red fire into the door frame for preheating it. Do not preheat sufficient to make the door frame red hot. When the welder is ready to start, temporarily place asbestos sheets over the red coals after the frame is preheated and proceed with the welding. When welding is finished close the door and let the machine stand for approximately one hour when it can be again operated.

The first door frame welding recracked and had to be welded the second time, but since then the welder has gained sufficent experience to weld door frames in place and make the job tight the first time without door frames recracking.

Cracking Oil in an Atmosphere of Tar Vapor

By HAROLD O. ANDREW, Springfield (Mass.) Gas Light Co.

IN the past it has not been uncommon to mix tar with the oil used in the manufacture of carburetted water gas. This was done with the intention of cracking the tar along with the oil and thereby saving oil. Tar has also been used in the generator during a down run for the purpose of saving generator fuel. Most of these attempts met with rather indifferent success and were discarded.

The writer has attacked this problem from a different standpoint. According to physical chemistry principles if oil were cracked in an atmosphere containing all the products of the oil reaction with the exception of the end product, tar, it would be expected that all the oil would go to the formation of tar until equilibrium conditions were satisfied; and vice versa, if oil were cracked in an atmosphere of the end product, tar, it would be expected that all the oil would go to form the other products of the reaction and none of the oil to tar.

$$\text{Oil} + \text{heat} = \text{gas and tar.}$$

$$\text{Oil} + \text{tar and heat} = \text{gas.}$$

Since for equilibrium conditions with a constant pressure there is a definite proportion of the individual constituents for any temperature, we have tried cracking the oil in the presence of at least sufficient tar (about 15%) to satisfy equilibrium conditions for the temperature used.

The tar was injected into the top of the generator parallel to the fuel bed during the up run in order that it might be vaporized in the generator and carried into contact with the oil while in the vapor phase, as the intention was not to crack any considerable amount of the tar itself but merely to supply from an outside source the tar that otherwise would be formed at the expense of the oil.

The results so far have been encouraging and it is believed that with the proper control and a little further experimental work a gallon of tar will serve the purpose of a gallon of oil.

The Thomas Recording Gas Calorimeter

By H. N. PACKARD

WITH the rapid change from the candle-power to the heating value standard for artificial gases, the gas calorimeter is rapidly becoming the most important control instrument used in gas plant practice. The calorimeter readings are not only essential from the general interests of the public, but also serve as a direct indication of the efficiency of the gas making processes, showing immediately the effects of improper operation. The calorimeters in general use at present are highly satisfactory as to accuracy and simplicity but require the entire time of skilled operators to obtain intermittent results at sufficiently close intervals for good plant regulation.

To meet the demand for a continuous record of heating value of the same order of accuracy as obtained by present manually operated calorimeters, but without requiring the services of an operator, a new design of calorimeter has been tried out. This calorimeter is an automatic continuous gas calorimeter furnishing a record and indication of the total heating value of a gas. It has been the aim throughout the design of this instrument

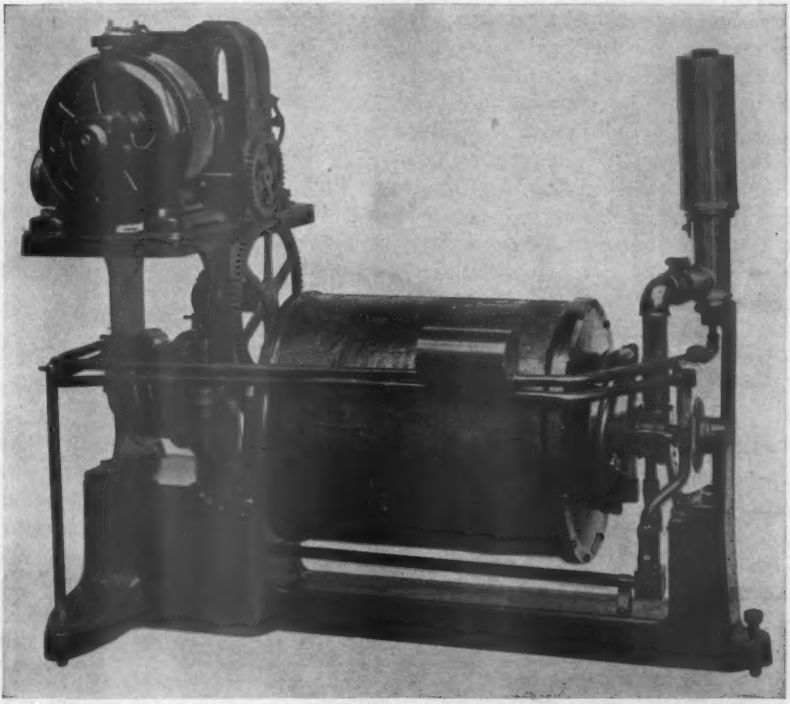


Fig. 1.—Recording Calorimeter Meter Units and Burner.

to eliminate all arbitrary settings and calibrations and to give a final record of the total heating value of a gas free from any corrections for measurement conditions.

This calorimeter consists of two water sealed drum meters geared together and mounted in the same case; a burner and calorimeter body, two resistance thermometers and a clock driven recorder.

The operating principle is essentially the same as the well known Junker calorimeter, except that the heat absorbing medium is air instead of water. One of the above mentioned wet meters is used to measure the gas to be sampled, the other measures the cooling air. As these meters are geared together, the two measured streams are in constant volumetric proportion. The gas is burned in a closed type burner separate from the stream of cooling air. The incoming and outgoing temperatures of the cooling air are measured by a pair of electric resistance thermometers, and their difference in temperature is recorded on a clock driven paper roll at any convenient distance from the calorimeter proper. This temperature difference is directly proportional to the total heating value per standard cubic foot of gas.

Air is used as the cooling medium because of the ease with which it may be accurately proportioned to the gas stream. The two wet drum meters are power driven so that the air and gas streams may be measured at atmospheric pressure, thus eliminating the need for sensitive pressure regulators. Both streams of gas are brought into intimate contact with the common water seal used for the two meters; consequently, they are both saturated with water vapor and are at like temperatures at the point of measurement.

The temperature rise in the calorimeter is independent of the actual speed of the measuring devices and is dependent only on the heating value of the sample. For instance, if a certain meter speed gives a 20° temperature rise and the meter speed be doubled, twice the gas will be passed but at the same time twice the cooling medium will also flow, and the same temperature rise will be obtained. On the other hand, any change in the heating value of the gas will cause a corresponding change in temperature rise.

The temperature recording system employed is the same type as that already thoroughly worked out in the Thomas Gas Meter and is extremely sensitive and reliable. It has the particular advantage, that any desired correction law may be applied by proper design of the recorder electrical resistances. Compensation is made by this means for the increasing dilution of the gas with water vapor at high operating temperatures and in consequence the calorimeter accuracy is unaffected by variation in room temperatures over wide ranges.

As both the gas and air meters are mounted on a common base and are provided with a common water seal, the only requirement for setting is that the meters be reasonably well leveled. The meter designs are such that changes in water level affect both meters alike, hence their ratio of measurement is unaffected by change in water level. With this design an ordinary weir overflow is used which regulates the water level with sufficient accuracy for satisfactory measurement.

The meter designs are somewhat unusual to meet the special requirements of this service. In the first place, it is essential to regulate both air and gas to atmospheric pressure at the point of measurement. The method used to obtain this condition is to power drive both meters and supply air and gas to their intakes under atmospheric pressure. To obtain

a meter of reasonable diameter and accuracy for the gas measurement, it is designed with a series of curved tubes mounted on the outside of a rotating drum. This meter is shown at the left in Fig. 1. The air meter is a simple casting built like a uniform pitch screw conveyer. It is the large drum at the center, Fig. 1.

No mention has been made of a third meter of the tube type mounted on the right hand head of the air meter, Fig. 1. This meter is used to supply completely saturated and tempered air to the gas burner for combustion purposes. It is desirable to furnish this combustion air in fixed ratio to the gas to ensure, with no adjustments, satisfactory combustion.

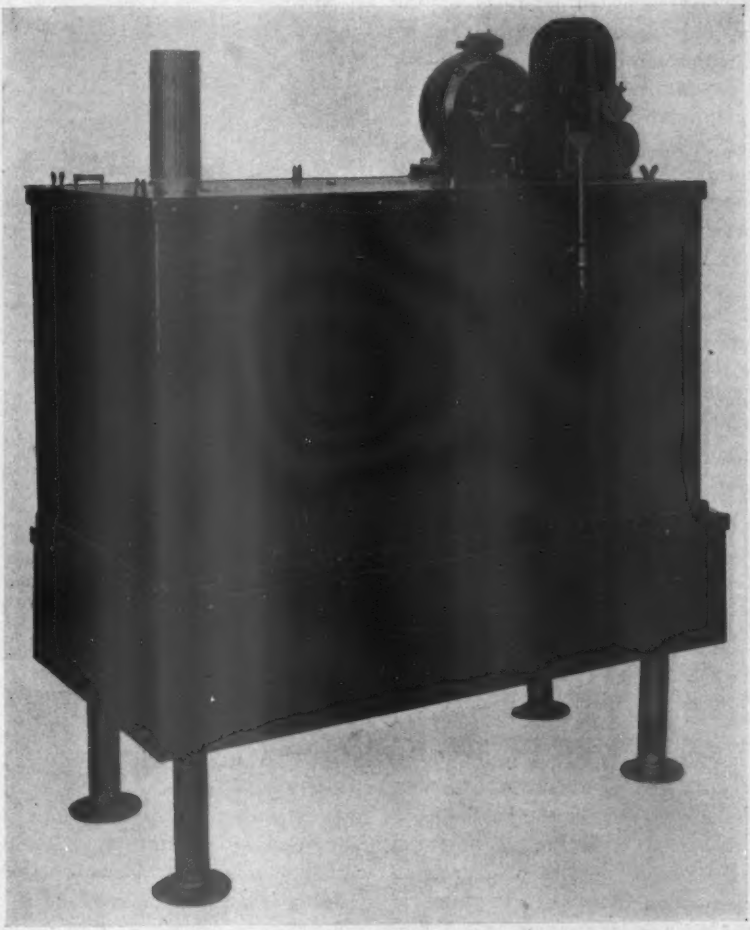


Fig. II.—Meter and Burner Units Assembled in Enclosing Tank.

To maintain a slight circulation of water through the calorimeter, an auxiliary tank is provided below the main tank, Fig. 2, and a small chain pump brings up the water from the lower storage tank, spilling it into the main tank. The sur-

plus water flows over the main tank weir and returns to the storage tank.

The recorder, Fig. 3, is a unit which may be located at any desired distance from the main calorimeter parts and from this recorder, may be obtained graphic and indicated readings of the total heating value. The recorder is furnished with a novel type of electric clock which requires no winding and will operate continuously as long as power is supplied to it. This clock, being of the pendulum type and independent of spring tension, gives much more accurate timing than may be obtained from the usual types of recording meter clocks. The whole operation of the calorimeter is controlled from this recorder case including start, stop, and ignition of the gas at the burner. The only attention required by the instrument is an occasional oiling, replenishment of water, adjustment of level and a change of recording charts.

The calorimeter is connected directly to the gas line and any lighting circuit, and requires no water piping or water storage tank. Additional recorders may be located at any part of the plant where duplicate heating value records are desired.

Fig. III.—Strip Type B. t. u. Recorder.

Use of Heavy Oils for Gas-Making

By HAROLD O. ANDREW, Springfield (Mass.) Gas Light Co.

AT the present time the gas industry is faced with the necessity of using the heavier grades of petroleum for gas-making purposes. It seems to be the concensus of opinion that higher temperatures and shorter contact times should be used with these oils.

These conclusions are opposite to the theory involved, as molecules of high molecular weight break up initially at lower temperatures than those of low molecular weight although the secondary decomposition (fixing) may not be any easier. Therefore, theoretically, although contrary to general opinion, by using a lower temperature and a longer contact time (slower rate of oil input), we should get the best results.

The writer's experience has been that by using a lower temperature (1300° F.) at the base of the superheater, better results are obtained with a 24° Be. oil than with a 35° Be. oil under the old conditions.

RECENT ARTICLES IN CHEMICAL PRESS OF INTEREST TO GAS MEN

Contributed by Sub-Committee on Abstracts* of the Chemical Committee

DETERMINATION OF THIO-CYANATES IN AMMONIACAL LIQUOR AND WASTE LIQUOR FROM AMMONIA STILLS IN THE BY-PRODUCT COKING INDUSTRY. By Joseph A. Shaw, *Journal of Industrial and Engineering Chemistry*, Vol. 12, 676 (July, 1920). The results indicated in this method can be determined to within 0.01 gram per liter. (E. J. Murphy.)

INFLUENCE OF ARTIFICIAL ENRICHMENT OF ILLUMINATING GAS ON THE CRYSTALLIZATION OF NAPHTHALENE IN THE MAINS. By Chas. Abderhalden, *Chemical and Industrial Engineering Journal*, Vol. 3, 19-23 (1920), also *Chemical Abstracts*, Vol. 14, 1030 (April 10, 1920). Laboratory research was carried out to determine the relation between the amount of carburetents and the point of supersaturation of the gas with naphthalene. Hydrocarbons boiling between 80-90° C. are best suited for enrichment. The following conclusions are drawn.

1. Illuminating gas enriched by hydrocarbons and saturated by naphthalenes at a given temperature can be cooled below this temperature without disposition of the naphthalene which is retained in the gaseous state in the enriching vapors.
2. The chemical constitution of the carburetent has no effect, but its boiling point seems to have a direct influence.
3. The cooling to which the gas can be submitted depends upon the weight of carburetent added.
4. The influence of enrichment upon the supersaturation of naphthalene is much more distinct when the gas is more fully saturated.

(E. J. Murphy.)

SUPPLEMENTING THE NATURAL GAS SUPPLY WITH BY-PRODUCT COKE-OVEN GAS. Paper read by C. J. Ramsburg at Buffalo meeting of Natural Gas Association, *Chem. and Met. Eng.*, Vol. 22, No. 26, 1214-15 (June 30, 1920). Of the high grade artificial gases available at present, coal gas and carburetted water gas are deserving of serious consideration. By-product coke oven possesses many advantages over the gas retort for the large scale manufacture of coal gas: the coke is of superior quality and the yield of by-products greater. The total gas production per year for the next five years from by-product coke ovens is estimated at 480,000,000,000 cu. ft. One of the most important factors affecting the availability of coke-oven gas for use outside the plant is the substitution of a low grade gas for heating the ovens. Producer gas or blast furnace gas can be used. By-product producers in connection with by-product coke plants offer attractive economic possibilities. As the demands of natural gas industry for a supplementary supply of high grade artificial gas increase, by-product plants will be erected primarily to meet this need. In Pennsylvania, Ohio and West Virginia, it will likely be profitable to build by-product coke ovens at the mines, because many coal mines supplying good coking coal are within easy reach of large gas distributing systems into which the coke oven gas could be conveyed. The ultimate ideal should be the conversion of all the coke into gas at by-product plants. This may be accomplished either by (*a*) gasification of the coke in producers using part of the producer gas to heat the ovens and the remainder to mix with the coke oven gas; or (*b*) part of the coke is gasified in producers making sufficient gas to heat the ovens. The remainder of the coke is put into water gas generators and converted into blue water gas, which is mixed with the coke oven gas.

((David L. Jacobson.)

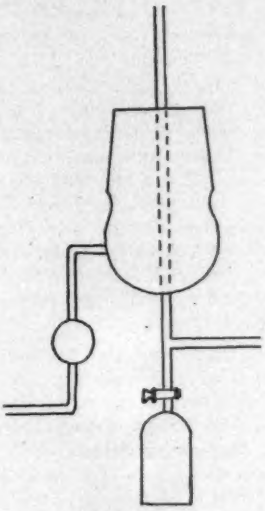
*Abstractors' names appear in brackets following each item.

Special Gas Wash-Bottle for Use in the Referee's Test for Sulphur

By A. E. MAZE.*

IN the Referee's test for total sulphur in gases the gas is burned in a suitable burner, where the sulphur is converted to sulphur dioxide. The products of combustion are carried into a series of wash bottles containing an alkaline solution of bromine, where the sulphur dioxide is absorbed and oxidized to sulphuric acid. If sufficient bromine is added at the beginning to suffice for the entire test a very large excess must be used. To keep the bromine consumption at a minimum only a slight excess is added at the beginning and the bromine is replenished from time to time. To maintain the flame in the burner considerable suction must be applied to the wash bottles. In adding the bromine the bottle nearest the burner is opened and in this way the draft is interrupted and frequently the flame is extinguished. At time this may not be noticed for some time and the test rendered useless.

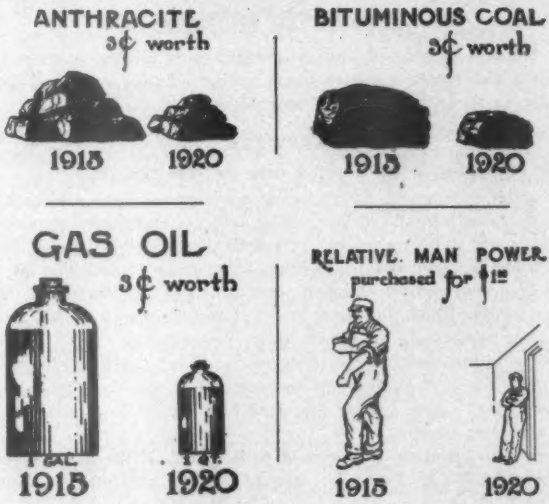
To eliminate this difficulty a wash-bottle having a funnel and cock in the



inlet is placed directly after the burner. The figure represents the top of such a wash bottle. Through this funnel the bromine may be added in required quantities without interrupting the draft or endangering the flame.

* Chemist, Denver Gas and Electric Light Co.

Some of the Reasons Why Gas Rates Had to Be Increased



The New Gas Rates are effective on all bills rendered for meters read on and after June 16th, 1920.

The Peoples Gas Light & Coke Co.

Telephone Wabash 6000. Michigan Avenue at Adams Street

The above illustrations accompanied the leading article in the July issue of this magazine. They have been put to effective use in an advertisement prepared by the Peoples Gas Light and Coke Company.

QUESTION BOX

THE questions and answers on accounting subjects in the Question Box have been contributed by the Accounting Section Committee on State Representatives, Mr. J. W. Heins, Chairman, who will be glad to receive inquiries from any of our members on their accounting problems.

Questions and answers under "General Problems" are the result of inquiries received at Association headquarters and answered through the committees of the various Sections or from the Association files.

Answers from our members are solicited on questions which come within their experience and such answers should refer to code number of Question, A-1, G-1, etc.

—*Editor.*

ACCOUNTING PROBLEMS

A-8 What is considered the best method of following up all non-register meters as shown on meter test sheets, and having bills for estimated consumption made out promptly and sent to the consumer?

ANSWERS.

Mr. P. D. Warren, The Peoples Gas Light & Coke Co., Chicago, Ill.

When a meter is removed, fitter fills out the coupon of tag (Form No. 594) showing company's and maker's numbers, size, make, address and floor removed from, cause of removal, date, index and fitter's name. He then places string through hole at the bottom of the tag folding the printed sides together to keep tag clean. The tag is then attached to the meter tube and remains attached until test has been completed. When completed, the coupon is detached and the meter tester shows the result of his test on the coupon and indicates the position of the hands on the printed dial.

The coupon is then sent to the office of the Chief Clerk of the Street Department and if the tester's report shows that the meter did not register accurately, a "Meter Inspection and Test" report (Form No. 347) is made out and sent to a special clerk in the Bookkeeping Department.

This clerk then estimates the amount to be billed, if the meter tests "slow," or the amount to be refunded if "fast," by referring to the customer's consumption for previous months.

If the customer is entitled to a refund, he is so advised by letter and credit is made on next bill rendered. If an estimated bill is rendered, it is inclosed in a letter giving the customer all the facts in the case.

The special clerk in the Bookkeeping Department makes all necessary notations on the ledger showing charge or credit and by means of his file of "Meter Inspection and Test" tickets, makes periodical checks to determine that final disposition is correctly made of charge or credit.

Mr. E. Haase, State Representative, Wisconsin.

Each consumer's book-ledger keeper is under duty of searching, at a specified time each month, for meters showing decided drop in consumption and to report to the Chief Clerk with a card showing name and address and consumption, present year and previous year, of any consumer whose consumption has taken a decided drop. The Chief Clerk keeps a sheet on which is listed the entire ledger force and checks off on this sheet whenever a ledger clerk reports that he or she has completed the search for non-registering meters and enters the number of suspicious cases reported.

Cards containing the names and addresses of consumers whose consumption has taken a decided drop, are turned over to the clerk in charge of high bill complaint investigation, who either immediately orders a meter test or an investigation by one

of his inspectors, inquiring into the cause for the drop. After such inspection a meter test may be ordered.

The reports of all non-registering meters, as they come from the meter shop on the daily record of meter tests, are entered upon such cards as referred to above, showing name and address and providing for the monthly consumption for several years and these cards are then held for a month after the new meter is installed. The first month's consumption, as recorded by the new meter, is then entered on that card and on the basis of consumption before the old meter went wrong, and taking into consideration the registration as shown by the new meter, an estimated bill is made by the Assistant Secretary and presented with a dictated letter, setting forth the circumstances in each case.

Mr. W. E. Houghton, Los Angeles Gas & Electric Corpn., Los Angeles, Cal.

The individual bookkeeper of each set of ledgers issues test orders on accounts which show a drop in consumption and upon their completion, immediately orders such meters changed as the tests prove are not registering within 2% of accuracy. An average bill is sent out with the first bill, following the installation of the correct meter and said average is based upon the consumption of the new meter.

Each bookkeeper's work is checked monthly by another bookkeeper and is audited about four times each year by a clerk to the Auditor.

Mr. John J. Armstrong, Consumers Gas Co. of Toronto, Toronto, Ont., Canada.

From the report received from the Meter Shop of the meters exchanged (Not Registering), the Application or General Order Department make out tickets, putting thereon name and address, meter number and date of exchange of meter. These tickets are forwarded to the Consumers' Accounting Department, where the ledger account is looked up to see if the meter has suddenly stopped registering, or has been showing a diminishing amount of gas each month for any period back. No action is taken with regard to estimating the amount to be charged until an idea is obtained of the rate of consumption as shown by the registrations of the new meter that has been installed, and it is our practice to leave the matter until the regular reading date for the district, after which a bill is made out showing the amount recorded by the new meter from the date set to the regular reading date, together with an estimated amount covering the period which the old meter appears to have been incorrectly registering. This amount is arrived at by charging the consumer the same quantity as was charged during the period in question the year previous, or by the amount shown to have been consumed by the new meter, allowing credit on the account for any amount paid during the period the estimated bill covers.

A-9 We would appreciate your obtaining through the State Representatives the general practice of gas companies on the following points:

1. Do you maintain shop forces to take care of housepiping, gas range, water heater installations, etc., or is this work delegated to outside plumbers and contractors?

2. If such work is done by the company is it based on the cost of the work and what accounting procedure is used to determine that such work does not really represent a loss?

3. Will you forward us copy in duplicate of any local ordinances covering regulations or specifications on the installation of services, meters, housepiping, appliances, etc.?

4. Will you forward us copy in duplicate of your company rules on the above subjects?

5. State what work on consumers' premises is now handled by your company free of charge. What class of work is charged for and what do these charges consist of?

ANSWER.

Association Headquarters.

More or less complete replies to the above questionnaire were received from 25 gas companies in different States which may be summarized as follows:

(1) Sixteen companies reported that shop forces were maintained for installing housepiping, gas ranges, water heaters, etc. Three companies reported this work as delegated to outside plumbers. Six companies reported housepiping work in new buildings as delegated to outside plumbers.

(2) Eight companies reported charges for such work as based on cost of material and labor only. Nine companies reported charges based on material and labor plus overhead and a reasonable profit.

(3) Copies of local ordinances on gas fitting were forwarded from the following cities and are on file: Portland, Maine; Cambridge, Everett, Malden, Medford and Springfield, Mass.; Albany, N. Y.; and Dallas, Texas.

Thirteen companies reported no local ordinances in effect.

(4) Company Rules on gas fitting were forwarded from the following cities and are on file: Chas. H. Tenney & Co., operating in various cities; Portland, Maine; Poughkeepsie and Newburgh, N. Y.; Portland, Oregon; Philadelphia, Pa.; Beaumont and San Antonio, Texas; and Salt Lake City, Utah.

(5) Two companies reported all work on meters, emergency and complaint work, demonstration and adjustment of appliances performed gratuitously.

Four companies reported only gratuitous work performed as adjustment of appliances where no material is required.

Five companies reported no gratuitous work performed beyond the meter.

GENERAL PROBLEMS

G-22 We are figuring on the practicability of putting in a plant to work up by-products—coal tar and ammoniacal liquor—and would like to be advised of the practices of those plants which are getting best results in this field. Can you state the equipment required and cost of same for a plant to take care of one to two thousand gallons of tar a day and the accompanying ammoniacal liquor?

ANSWERS.

Mr. C. H. Stone, Rochester Gas & Electric Corpn., Rochester, N. Y.

Almost all of the companies who do anything with these products themselves, simply dehydrate the tar and concentrate the ammonia to 18 or 20% liquor or make it into ammonium sulphate. At Rochester we have made some experiments on the working up of these residuals, although only on a laboratory scale. A plant producing only one or two thousand gallons of tar a day would not, in my opinion, be large enough to warrant spending any money in the working up of the tar.

Mr. A. S. Hall, Springfield Gas Light Co., Springfield, Mass.

We have two 2,500-gallon, direct fired, stills, and make road building materials. We sell about 1,250,000 gallons of road material and distillate per year. We have one 120,000-gallon tank, one 20,000-gallon tank and six 10,000-gallon tanks all fitted with coils so that they can be heated by steam. These tanks are used for storage of different grades of finished products. The labor required to operate this plant is three men at $4.50 per day and we also charge some supervision to this plant amounting to $5.00 per day.

Installing a plant of this kind does not pay unless you are thoroughly familiar with the manufacture of road materials required, and have a ready market in the immediate vicinity. The material has to be made to the proper viscosity, percentage of carbon and has to be kept at such a temperature that it can be pumped and spread on roads in proper shape. This requires considerable supervision, and at the present day prices of tanks and stills it is my opinion that when the interest on the investment is taken into account it would be much cheaper to sell the tar as a raw product than to try to make road materials.

For our ammonia production we have a still made by the Gas Machinery Company of Cleveland, Ohio. I do not know what the present day price of one of these machines is. The estimated cost of production is as follows:

Output = 650 lbs. NH_3 per day as a 12% liquor.
100 lbs. steam = 7,500 lbs. per day at 30¢ per M.
Lime = 240 lbs. per day at 1¢ per lb.
Labor = $9.75 per day 2 men.
Total cost of 1 lb. of NH_3 = 2.215 cents.

$$\text{Steam } \frac{2.25}{650} = .346¢$$

$$\text{Lime } \frac{240}{650} = .369$$

$$\text{Labor } \frac{9.75}{} = 1.500$$

2.215 cents

All the labor cannot properly be charged to the NH_3 as the men are required to do other things as well as tend the still.

Mr. A. H. Strecker, Public Service Gas Co., Newark, N. J.

It can readily be seen that work done in this direction in a small way must be much more expensive than at a large plant, where the products of a number of works are worked up together, where there is perfect apparatus and well trained help and supervision and where there is an efficient selling organization in close contact with the market for the finished products.

For these reasons a number of gas companies in Ohio, years ago, got together to have a central refinery for their raw products. The enterprise, however, did not meet with continued success, as far as I know.

Unless local circumstances are very favorable, like ready and well paying outlet for pitch, special tar for road making purposes, etc., the chances of making a continued success of a plant for working up the by-products of a gas works selling about 150 million cu. ft. of gas per year, are rather doubtful and will most likely require considerable effort on the part of the Manager. However, it would be entirely wise and proper to do two things:

1. To concentrate the ammoniacal liquor on the premises, especially when cost of transporting the raw liquor is so considerable as to be almost prohibitive. The concentrated product (about 26 oz. strength) is more readily saleable and freight charges are reduced greatly.

The cost of a concentrating plant, building, apparatus, tank to hold at least a carload of finished product would, at to-day's prices, probably run up to $4,500 or $5,000 and the cost of concentrating the liquor from one net ton of coal, including labor, time, steam, interest and amortization of plant, etc., would be not less than 10¢.

2. To dehydrate the raw tar, thus freeing it from whatever water it contains, so as to save the cost of transportation of such water and make the tar more acceptable and saleable. The cost of a simple still, condenser, possibly a pump and the necessary piping would to-day probably amount to $3,000 to $3,500 unless used but idle apparatus is on hand.

Mr. A. I. Phillips, Bureau of Standards, Washington, D. C.

(Mr. Phillips' reply is too complete to publish in the Question Box. As the information given is of interest to smaller gas plants the reply will be printed in full in the Technical Section of the next issue.

G-23 We have for several years used hot salt water for thawing frosted gas mains and would ask whether you know of any objection to this practice or any instance of disastrous results?

In connection with the use of wood alcohol for thawing frosted service, the present price is rendering this practice prohibitive. Have any member companies had experience with denatured alcohol, hot salt water or other substances for this purpose?

ANSWERS.

Mr. G. I. Vincent, Syracuse Lighting Co., Syracuse, N. Y.

Hot salt water has been in use in Syracuse for three winters, but I believe it has been used a much longer time in Minneapolis, and possibly some of the other western cities.

It is used principally for thawing services, although there is no reason why it could not be used for thawing mains also, although to thaw a long exposed main with a very low atmospheric temperature with this method, might not be satisfactory.

As far as I know no bad results have resulted from this practice. If the member company would state what is meant by "disastrous results" we might be in a better position to advise.

Mr. Geo. Wehrle, Denver Gas & Electric Light Co., Denver, Colo.

We have never had personal experience in using hot salt water as a medium for removing frost from gas pipes. We would think the corrosive effect on iron pipes and fittings would be detrimental. We have used the Hauck Steam Thawing outfit to good advantage on frost trouble.

Mr. F. C. Weber, H. L. Doherty & Co., 60 Wall St., New York, N. Y.

Regarding the use of hot salt water for thawing frosted gas mains, I see no reason at all why this is not a very satisfactory procedure. The freezing temperature of the salt solution is very low and at the same time it will actively attack frost in pipes. When wood alcohol is so expensive the use of hot salt water certainly will be not only very satisfactory, but so far as I know, entirely harmless. Wood alcohol is a very satisfactory solvent for frost troubles, but at present prices is almost prohibitive.

Mr. J. S. Parker, United Gas Improvement Co., Philadelphia Gas Works, Philadelphia, Pa.

In Philadelphia, we have had very limited experience with the thawing of mains, our experience being mostly with house services and street lamp risers and services.

We had on one occasion, however, a frozen 3 in. main and thawed it with the equipment that we generally use for services in the following manner:

The main was broken at a rod drip and surface water had entered through this crack and as the main was subsequently imbedded in frost, this water froze solid shutting off the gas supply.

We opened over an intersection about 150 ft. from a lamp service, removed a plug from a bag hole and then inserted our steam nozzle in the main and with 80 lbs. pressure injected steam. This steam issued later from the top of the lamp riser, showing that the main was clear to that point. We then injected steam at the same pressure into the drip rod by inserting ⅛ in. pipe to the bottom of the drip. After a couple of applications we started to get steam at the top of the riser of the lamp post proving that the main was then open between the drip and the lamp. The steam pressure worked back along the main beyond this drip in the direction from which the gas should come as was demonstrated by a lighted street lamp going out. After this, we ceased with the steaming process and the flow of gas immediately followed.

The home-made steaming apparatus used is made of an ordinary 15 gallon galvanized, horizontal house boiler, 36 in. long, 12 in. in diameter and tested to 150 lbs. pressure mounted horizontally on a pipe frame and surrounded by a galvanized sheet iron shield, the top half of the boiler and exposed back end having a thick sheet of asbestos covering to cut down radiation.

The boiler was heated by setting under it three ordinary plumber's furnaces which were kept in place by the use of two pipe guides connected to the feet of the stand, the reason for this being that when this equipment was being carried in a wagon, the furnaces could be kept lighted and in position.

The boiler, in most cases, was allowed to remain in the wagon and the hose was of sufficient length to extend through a cellar window and by the use of ⅛ in. pipe connected to the hose and inserted into the open end of a service steam was injected directly against the obstruction and in practically every instance, one application was sufficient to permanently relieve the condition.

We have had no experience with the use of salt water for thawing, but have for years past used denatured alcohol.

G-24 Could you advise us what gas companies are lubricating their gas meters? The results of our experimental work do not fully bear out the claims made for this practice.

ANSWER.

Mr. W. A. Castor, Consumers Meters Committee.

The spraying of meter valves is carried on in Syracuse, N. Y., as a regular practice. Mr. G. I. Vincent, Engineer, states that the oil not only brings the meters to within better proof, clears up works catch conditions as well as most of the slow motion, or small flame leaks but, in addition, oils the diaphragms and all surfaces and bearings in the valve and diaphragm chambers.

The Syracuse practice is to spray the oil under continuous pressure into the long channels of the meters for something like fifteen or twenty minutes immediately following the making of the check tests.

In Philadelphia the practice for the past three or four years has been to spray meter oil, or No. 4 neutral oil, on the valves of meters which failed to pass the slow motion test. This practice resulted in the remedying of about 80% of the slow motion failures without the necessity of overhauling the meters.

During the past eighteen months, the practice has been to spray oil on the valves of all Philadelphia meters before placing them in district O. K. stock. The reason for so doing is to prevent the valves from sticking to their seats while the meters are waiting to be set. No spraying of valves is attempted if the meters are new or if the valves and seats have been cleaned in the course of repairs. The oiling of the valves actually prevents them from sticking as it was expected to.

The Philadelphia method of spraying is to use a special hand syringe to force two fine streams of oil through the forked channels so as to strike the under surfaces of the valves. If air under pressure was available for the purpose, this method would be abandoned in favor of the method employed in Syracuse.

G-25 We have started a Building and Loan Association among our employees which provides for Savings and Loans for home building purposes. Have any of your company members in operation a Building and Loan Association for their employees and if so will you kindly give us as much information as you have available?

ANSWERS.

Mr. J. W. Heins, Philadelphia, Pa.

I am enclosing you a specimen copy of The U. G. I. Employees' Association Savings Fund booklet. This Association was started very recently and at the present time we have upwards of six hundred members. This Association is distinctly within the Company, so much so that as soon as an employee ceases his connection with the Company he is automatically dropped out of the Employees' Association. We hope to pay 5% on moneys deposited, and our present outlook is very promising.

Mr. F. H. Patterson, Rochester Gas & Electric Corpn., Rochester, N. Y.

The only Public Utility Company which operates a Building and Loan Association, of which I know is the Milwaukee Electric Railway & Light Co., Milwaukee, Wis.

Mr. S. C. Robinson, New York Edison Co., New York, N. Y.

This Company's Savings and Loan Association was incorporated under the banking laws of the State in 1912 and has for its object the systematic saving of money and the loaning of such accumulation to its employees for home owning purposes.

The Association is conducted along the lines of the regulation Savings and Loan Association and now has assets of over $800,000.00 which speaks for its success.

Some $750,000.00 has been loaned to employees on bond and mortgage, consisting of about 260 loans.

The Association has a membership of a little over 3,000 and in the great majority of cases dues are paid by weekly deductions from the pay envelopes. This is an *important* item, has worked most satisfactorily and to it we attribute *to a large extent* the success of the enterprise.

The Company pays all of the operating expenses of the Association. None of the officers or directors receive any pay. The services of the Appraisal Committee is also entirely gratuitous.

We are enclosing a copy of the Association's By-Laws which cover the ground fully.

Mr. Wm. Schmidt, Jr., Consolidated Gas, Elec. Lt. & Pr. Co., Baltimore, Md.

This company has had in operation since 1914, a Savings and Investment Fund for its employees. Full information concerning this plan is contained in the accompanying booklet. Recently, however, a limited-loan feature has been adopted, under which employees having acceptable collateral may borrow amounts not exceeding $75.00. These amounts may be repaid in installments over a period of one year. Interest at the rate of 6% per annum is charged on such loans.

G-26 Information is wanted as to any cast iron bell and spigot line 12-inch or over in size carrying gas at a pressure of over 5 pounds. Details as to the joint used, the number of years in service and any troubles with leaky joints will be welcomed.

G-27 Information from our members will be appreciated on the following questions received in connection with gas lighting:

1. What are the manufacturers doing toward getting out a fixture which can be used for commercial business?

2. Why should combination gas and electric companies push and continue to encourage the sale of electricity for lighting (which means piling up a peak load of lighting electric), where they have to carry an expensive equipment big enough to take care of this peak load, while it could be much easier handled as a gas load on account of the storage capacity and therefore save the investment in many thousand dollars of electric equipment?

3. What is the gas consumption in the two mantles of a 2-light semi-indirect fixture and also in the pilot?

4. What are the actual costs of operating commercial gas arcs with gas at one dollar per thousand, as compared with the competitive sizes of electric lamps for various rates per kilowatt hour?

5. Should the gas company furnish free inspection for resident lighting and how often?

What is the difference in efficiency between the inverted type of lamp and upright type, comparing Reflex Lamp No. 6 and C. E-Z Lamp, and also what is the difference in gas consumption?

6. How often should semi-indirect fixtures be inspected?

7. How many company members send an inspector periodically to examine semi-indirect and other residence gas lighting units; and what is the percentage of maladjustments, broken mantles, smoky ceilings, no canopies put on, to the total visits or list to be done?

AMERICAN GAS ASSOCIATION, Inc.

List No. 37—September, 1920

Rate Increases Secured.

Where information is not secured from company receiving increase, the source of information is noted in brackets. See Cumulative List No. 5, of December, 1919, for explanation of abbreviations. This list includes only increases reported as secured subsequent to August 1, 1920.

CONNECTICUT

New Haven: Co. reports third increase effective Aug. 1, 1920, by adding a S. Chge. 3 and 5 lt. meters 50¢ per month, 10 lt. 60¢, 20 lt. 70¢, 30 lt. 80¢, 45 lt. $1.00, 50 lt. $1.10, 60 lt. $1.25, 80 lt. $1.50, 100 lt. $1.75, 150 lt. $2.00, 200 lt. $2.25, 250 lt. $2.50, 300 lt. $2.75, 500 lt. $3.00 per month.

Norwich: City reports second increase effective August 1, 1920. New rate: 1st CCF $1.00—next 400 CCF 20¢ per C—next 1,500 CF $1.80 per M—next 18 MCF $1.50—next 55 MCF $1.35—over 75 MCF $1.15 per M. M. M. Chge. $1.00.

Wallingford: Co. reports third increase effective July 1, 1920. New rate: 1st 50 MCF $2.10 gross, $2.00 net per M 10 days—next 50 MCF $1.85 net—over 100 MCF $1.50 net per M. M. M. Chge. 50¢ per month. P. P. Meters $2.00 per M.

GEORGIA

Savannah: Co. reports third increase effective August 1, 1920. New rate: 1st 10 MCF $1.50—next 20 MCF $1.40—next 20 MCF $1.35—over 50 MCF $1.30 per M, disc. 10¢ ten days.

INDIANA

La Porte: Co. reports increase effective May 1, 1920. New rate: 1st 5 MCF $1.75—next 5 MCF $1.70—next 10 MCF $1.65—next 30 MCF $1.55—next 50 MCF $1.40—over 100 MCF $1.25 per M, disc. 10¢ per M. M. M. Bill $1.00 for 600 c. f. or less.

Valparaiso: Lighting Co. reports increase effective August 1, 1920. Old rate: 1st 5 MCF $1.25—next 20 MCF 95¢—over 25 MCF 85¢, to which was added a sur-charge of 10¢ per M, disc. 10¢ per M. New rate: 1st 5 MCF $2.00—next 20 MCF $1.90—over 25 MCF $1.80 per M, disc. 10¢ per M.

IOWA

Dubuque: Co. reports increase effective Aug. 1, 1920. New rate: 1st 100 c. f. 60¢—200 c. f. 75¢—300 c. f. 85¢—400 c. f. $1.00—500 c. f. $1.15—600 c. f. $1.30—700 c. f. $1.45—800 c. f. $1.60—900 c. f. $1.75, less 10¢, 10 days—1 MCF $1.85 less 15¢, 10 days, making net rate $1.70 per M.

MASSACHUSETTS

Amherst: Co. reports third increase effective June 1, 1920. New rate: 1st 2 MCF $2.50 per M net—over 2 MCF $2.00 net per M.

Boston: Co. reports fourth increase effective July 23, 1920. New rate: $1.35 net per MCF.

Beverly: Co. reports third increase effective July 1, 1920. New rate: $1.90 gross, $1.70 net per MCF. P. P. Meters $1.80 per M. Same rates apply to Danvers.

Braintree: Co. reports fourth increase effective Sept. 1, 1920. New rate: $2.10 per MCF, disc. 10¢ per M 15 days.

Charlestown: Co. reports third increase effective June 20, 1920. New rate: $1.50 per MCF, disc. 15¢ per M.

Clinton: Co. reports second increase effective June, 1920. New rate: $2.00 gross, $1.90 net per MCF.

East Boston: Co. reports fourth increase effective Aug. 1, 1920. New rate: $1.35 per MCF.

Fitchburg: Co. reports second increase effective Feb. 1, 1919. New rate: 1st 25 MCF $1.40—next 25 MCF $1.25—over 50 MCF $1.15 per M, disc. 10¢, 15 days.

Co. reports third increase effective July 23, 1920. New rate: 1st 25 MCF $1.80—next 25 MCF $1.65—over 50 MCF $1.55 per M.

Holyoke: Co. reports third increase effective Aug. 1, 1920. New rate: $1.70 gross, $1.60 net per MCF.

Hyde Park: Co. reports third increase effective Aug. 1, 1920. New rate: $1.55 per MCF with following discounts. Under 3 MCF 5¢ per M—next 27 MCF 10¢—next 70 MCF 15¢—over 100 MCF 20¢ per M. M. M. Chge. 50¢ per month.

Lexington: Co. reports second increase effective June 1, 1920. New rate: $2.10 per MCF—over 10 MCF $1.85 per M, disc. 10¢ per M.

Lowell: Co. reports fifth increase effective June 1, 1920. New rate: 1st 100 MCF $1.50 gross, $1.40 net per M—next 100 MCF $1.30—over 200 MCF $1.25 per M.

Marlborough: Co. reports second increase effective July 1, 1920. New rate: $2.00 per MCF less disc. 20¢ per M 10 days.

Newton: Co. reports fourth increase effective Aug. 1, 1920. New rate: $1.35 per MCF.

North Attleboro: Co. reports second increase effective Aug. 1, 1920. New rate: $1.80 gross, $1.65 net per MCF.

Palmer: Co. reports fourth increase effective June 1, 1920. New rate: 1st 2 MCF $3.00 net—next 3 MCF $2.90—next 25 MCF $2.50—next 20 MCF $2.40—over 50 MCF $2.30 per M net 10 days. M. M. Chge. $6.00 per year.

Plymouth: Co. reports second increase effective July 1, 1920. New rate: $2.00 gross, $1.80 net per MCF.

Springfield: Co. reports fourth increase effective July 1, 1920. New rate for Springfield, Chicopee, West Springfield, Agawam, Ludlow, and Longmeadow: $1.55 gross, $1.45 net—for So. Hadley: $1.65 gross, $1.55 net—for East Longmeadow: $1.70 gross, $1.60 net.

MICHIGAN

Kalamazoo: Co. reports increase effective July 1, 1920. New rate: 1st 50 MCF $1.60—next 50 MCF $1.50—next 50 MCF $1.40—next 50 MCF $1.35—over 200 MCF $1.30 per M, disc. 10¢ per M. M. M. Chge. 50¢ per meter.

Manistee: Co. reports fourth increase effective July 1, 1920. New rate: 1st 10 MCF $1.85—next 10 MCF $1.45—over 20 MCF $1.30 per M. Penalty 10¢ per M. M. M. Chge. 25¢ per meter. Co. reports fourth increase effective July 1, 1920. New rate: $2.10 gross, $2.00 net per M.

Saginaw: Co. reports increase effective July 1, 1920. New rate: 1st 50 MCF $1.60—next 50 MCF $1.50—next 50 MCF $1.40—next 50 MCF $1.35—over 200 MCF $1.30 per M, disc. 10¢ per M. M. M. Chge. 50¢ per meter per month. Old rates: 35¢ less per M each block.

MISSOURI

Kansas City: Co. reports second increase effective July 1, 1920. New rate: 80¢ per MCF plus S. Chge. of 50¢ per month per meter.

NEBRASKA

Beatrice: Co. reports third increase effective July 1, 1920. New rate: $2.20 gross, $2.15 net per MCF.

Omaha: Gas Co., Old rate under private control $1.25 gross, $1.15 net per MCF. New rate under municipal control effective August 1, 1920: 1st 10 MCF $1.35—next 20 MCF $1.30—next 70 MCF $1.20—over 100 MCF $1.10 per M, disc. 10¢ per M 10 days. S. Chge. 50¢ per month. The "Dollar Rate" promised applies only to consumers of over 100 MCF.

NEW HAMPSHIRE

Portsmouth: Co. reports third increase effective June 15, 1920. New rate: 1st 10 MCF $1.55—next 20 MCF $1.45—over 30 MCF $1.35, disc. 10¢ per M. S. Chge. 50¢ per month. Coal clause: For every increase in cost per net ton of coal, stored, of one dollar or a fraction thereof above $7.50 will add 1¢ per 100 CCF to the rate for gas.

NEW JERSEY

Newark: Co. reports third increase effective Aug. 1, 1920. New rate: 1st 20 MCF $1.40—next 30 MCF $1.35—next 50 MCF $1.30—next 50 MCF $1.25—next 50 MCF $1.20—next 100 MCF $1.15—next 500 MCF $1.10—over 800 MCF $1.05 per M. B. t. u. standard reduced from 600 to 525.

NEW YORK

Albany: Co. reports second increase effective Aug. 11, 1920. New rate: 1st 25 MCF $1.30 net per M—all over 25 MCF $1.20 net per MCF.

Coney Island: Co. reports increase effective August 1, 1920. New rate: $1.40 per MCF to Oct. 1, 1920. Standard changed from 22 C. P. to not less than 525 B. t. u., on October 1, 1920, and rate to be reduced in accordance with any saving made thereby.

Gloversville: Fulton County Gas & E. Co. reports increase effective Sept. 1, 1920. New rate: 1st 5 MCF $1.50—next 5 MCF $1.40—over 10 MCF $1.30 per M net. S. Chge. 3 and 5 lt. 50¢, 10 and 20 lt. 75¢, 45 and 60 lt. $1.00, 100 and larger $1.25 per month. Old rates 30¢ per MCF less and no S. Chge.

Norwich: Co. reports increase effective Sept. 1, 1920. New rate: 1st 10 MCF 22½¢ per CCF—next 10 MCF 19½¢—next 10 MCF 17½¢—next 20 MCF 15¢—over 50 MCF 14¢ per CCF, disc. 1¢ per CCF. M. M. Chge. 50¢ net discount period.

Schenectady: Adirondack Power & Lt. Corp. reports increase effective July 11, 1920. Old rate: 1st 50 MCF $1.10—next 10 MCF $1.05—next 20 MCF $1.00—next 20 MCF 95¢—next 50 MCF 90¢—next 850 MCF 85¢—over 1000 MCF 80¢ per M, disc. 10¢ per M 15 days. Fuel rate 70¢ per MCF. New rate: 1st 50 MCF $1.50—next 50 MCF $1.40—over 100 MCF $1.20 per M, disc. 10¢ per M 15 days. M. M. Chge. 50¢ per meter per

month. House heating, rate $1.20 net per MCF. M. M. Chge. $1.00 per meter. Rates apply also to Rotterdam, Niskayuna, Scotia, and Glenville.

Utica: G. & E. Co. reports increase effective April 1, 1916. 1st 25 MCF $1.10—next 25 MCF $1.00—next 50 MCF 90¢—next 150 MCF 85¢—next 250 MCF 75¢—next 500 MCF 70¢ per M, disc. 10¢ per M 10 days. Second increase effective April 15, 1920: 15¢ per MCF added to each block. Third increase Aug. 10, 1920, adds 25¢ each block, disc. as before.

NORTH CAROLINA

Charlotte: Southern Public Utilities Co. reports increase Aug. 1, 1920. New rate: 1st 10 MCF $2.10—next 10 MCF $1.95—next 10 MCF $1.75—next 20 MCF $1.65—over 50 MCF $1.55 per M, disc. 10¢ per M. M. M. Chge. $1.50 per month. Old rate 65¢ less per M each block. M. M. Chge. 50¢ per M each block.

Raleigh: Co. reports second increase effective Aug. 1, 1920. New tentative rate granted: 1st 10 MCF $2.30—next 10 MCF $2.15—over 20 MCF $1.90 per M, disc. 5¢ per M 10 days. M. M. Chge. $1.50 net per month.

PENNSYLVANIA

Scranton: Co. reports increase effective August 1, 1920. New rate: 1st 15 MCF $1.70—next 10 MCF $1.50—next 75 MCF $1.40—next 200 MCF $1.20—over 300 MCF $1.00 per M. M. M. Chge. 50¢ per meter.

Waynesboro: Gas Co. reports increase effective June 29, 1920. New rate: 1st MCF $2.00 net—next 2 MCF $1.90—next 2 MCF $1.80—next 5 MCF $1.70—next 50 MCF $1.30—over 75 MCF $1.20 per M. Old rate 25¢ less each block. R. T. S. Chge. 3 and 5 lt. 50¢, 10 and 20 lt. 75¢, 30 lt. and over $1.00. P. P. Meters $2.00 per M.

RHODE ISLAND

Newport: Co. reports second increase effective July 7, 1920. New rate: 1st 100 c. f. 71¢—next 400 c. f. 21¢ per CCF—next 10 MCF $1.55—next 30 MCF $1.45—next 60 MCF $1.35 per M, disc. 10¢ per M 10 days. S. Chge. 50¢ per month.

VERMONT

Burlington: Co. reports second increase effective April 1, 1919. New rate adds 20¢ to each block, disc. 10¢, 10 days.

Co. reports third increase effective Aug. 1, 1920. New rate: 1st 10 MCF $1.85—next 10 MCF $1.75—next 30 MCF $1.65—next 50 MCF $1.55—over 100 MCF $1.50 per M, disc. 10¢, 10 days.

WASHINGTON

Wenatchee: Central Washington Gas Co. reports increase effective May 1, 1920. 1st 3 MCF $2.00 per M—next 2 MCF $1.71—next 5 MCF $1.44—over 10 MCF $1.15. M. M. Chge. $1.00. All rates net. New rate: 1st 900 c. f. $1.60 to $2.90—1st MCF $3.00—next MCF $2.80—next MCF $2.60—next MCF $2.30—next MCF $2.10—next 5 MCF $2.00—next 5 MCF $1.70—over 15 MCF $1.50 per M.

WEST VIRGINIA

Martinsburg: Co. reports second increase effective June 1, 1920. New rate adds 50¢ per MCF each block. M. M. Chge. remains as before. The first and second increases adds 75¢ per MCF each block.

WISCONSIN

Janesville: Co. reports second increase effective June 1, 1920. New rate: 1st 2 MCF $1.85—next 3 MCF $1.75—over 5 MCF $1.60 per M. Penalty 10¢ ten days. M. M. Chge. 50¢ per month.

(Continued from page 574)

are looked upon as a leaven of unrest. When the Gas Companies of the country have passed through the present dark valley, the merchandiser will be found prompting the Utilization Engineer to the benefit of the whole industry. The industrial application of gas is to-day but in its infancy.

Employment Bureau

SERVICES REQUIRED

WATER GAS—Experienced water gas maker wanted. Gas Works vicinity of New York. Address—American Gas Association, 130 East Fifteenth Street, New York, N. Y.

Key No. 4

WANTED—Thoroughly experienced gas appliance salesman. State age, reference and salary expected. Address—American Gas Association.

Key No. 7

WANTED—Man with experience in the selection of leather and the manufacture of gas meter diaphragms, to take charge of and develop a shop for the making of diaphragms. A good opportunity for the right man. Address The Laclede Gas Light Company, 1017 Olive Street, St. Louis, Missouri.

Key No. 9

SERVICES OFFERED

WANTED—Position as manager in city of 60,000 or over by college graduate of 16 years connection with gas business. A successful record as manager of 2 gas companies, and as superintendent of one of the largest gas plants in U. S. Has had practical experience in every branch of the business and has made good. Address American Gas Association.

Kep No. 102

WANTED—Position as gas engineer or manager by a man of large experience in both capacities in manufacture and distribution of coal or water gas. 38 years of age with excellent references. Address—American Gas Association, 130 East 15th Street.

Key No. 103

WANTED—Young man desires a position with opportunities. Present location 5 years and cannot go higher. Thoroughly trained and experienced in water gas operation. New business and management. Address—American Gas Association.

Key No. 104

WANTED—Young man 32, experienced manager and office manager desires position with a combination company. Salary $250.co per month. Address—American Gas Association.

Key No. 106

WANTED—Position as superintendent wanted by technical man, married, 30 years of age, experienced in manufacture of water gas and high and low pressure distribution. Can furnish best of references. Address—American Gas Association, 130 East Fifteenth St., New York, N. Y.

Key No. 108

WANTED—Position as Manager or Assistant in medium size town. Has had 15 years experience in coal and water gas and electric operation. Technical graduate. Any location. Address—American Gas Association.

Key No. 109

WANTED—Position as Industrial Power and Fuel Engineer. Technical engineer and salesman of excellent qualifications for industrial power and fuel sales. Now employed $3000. Address—A. G. A.

Key No. 111

WANTED—Position as Superintendent of a Coal and Water Gas Plant having a practical experience in the manufacture of same. Age 44 years and married. Salary 250 per month. A-1 references, can take up duties at once. Address A. G. A.

Key No. 112

AMERICAN GAS ASSOCIATION, INC.

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